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INFORMATION AND SUPPORT GIVEN BY INPATIENT NURSES, MATERNAL FACTORS, AND BREASTFEEDING SUCCESS

by

Linda A. Hagemann

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

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ABSTRACT

The importance of breastfeeding has been well documented in the literature. However, it is unclear what impact inpatient nurses have on the success of breastfeeding. A prospective, exploratory design was used to examine the relationship between information and support given by inpatient nurses to breastfeeding success at six weeks postpartum. This study also looked at the different patterns of infant feeding and breastfeeding success, as well as explored what maternal factors predict breastfeeding success at six weeks postpartum. The maternal factors used were based on a review of the literature and organized within the framework of Cox's Interaction Model of Client Behavior.

The sample of 230 breastfeeding mothers was recruited from eight hospitals in two Southwestern cities between April and August 2001. Data was collected by survey at the prenatal, two week, and six week postpartum periods. Analysis of the research questions was completed using the Pearson product-moment correlation, simultaneous multiple regression analysis, and the independent *t* test.

There was a significant positive correlation between information and support given by inpatient nurses and breastfeeding success at six weeks postpartum. No differences were found in breastfeeding success for mothers

who were considered exclusive breastfeeders or mixed feeders. Possessing breastfeeding confidence and having positive social supports for breastfeeding were predictor variables of breastfeeding success in this sample.

These findings suggest that inpatient nurses do positively impact breastfeeding success at six weeks postpartum. Nurses can continue to provide the information and support necessary to maintain a new mother's breastfeeding confidence, and support the mother's choice in her pattern of feeding. Nurses can also tailor their interventions to incorporate the mother's social supports, which can further enhance the success of breastfeeding.

INFORMATION AND SUPPORT GIVEN BY INPATIENT NURSES,

MATERNAL FACTORS, AND BREASTFEEDING SUCCESS

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April 2002

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I would like to dedicate this work to my husband, [redacted] and my daughters, [redacted] nd [redacted] for their love and boundless support, and belief that together we can accomplish anything.

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DISCLAIMER

"The views expressed in this thesis are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the United States Government."

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CHAPTER 1

Introduction

Background/Need for the Study

There has been a wealth of information discussing the benefits of breastfeeding. Immunological properties of breast milk have been correlated with lower rates of necrotizing enterocolitis, otitis media, respiratory syncytial virus infection, Haemophilus influenzae, meningitis, gastroenteritis, sepsis, urinary tract infections, and pneumonias in infants (American Academy of Pediatrics (AAP), 1997; Bass & Groer, 1997; Lawrence, 1997; Mooreland & Coombs, 2000). Maternal benefits such as reduction in postpartum bleeding, earlier return to prepregnant weight, and decreased risk of ovarian and premenopausal breast cancer have been cited by the American College of Obstetricians and Gynecologists (ACOG) (ACOG, 2000).

Both the American Dietetic Association (ADA) and the AAP advocate the use of breast milk as the basis for healthy infant feeding practices. To ensure mothers and their infants enjoy not only the immunological and nutritional benefits, but also the psychological (Leff, Gagne, & Jefferis, 1994) and economic gains (Tuttle & Dewey, 1996) from breastfeeding, the recommended guidelines are to sustain exclusive breastfeeding for at least four to

six months. The introduction of solid foods should occur in the second half of the first year of life, with continued breastfeeding as mutually desired (AAP, 1997; ADA, 1997).

Because of the recognized maternal and infant benefits of breastfeeding, it has become an important public health goal. From 1970 to 1982, the hospital initiation rate climbed from 26.5% to 61.9% (Ross, 2000). However, a steady decline beginning in 1983 prompted action by the Surgeon General. The Surgeon General's Workshop on Breastfeeding and Human Lactation established goals in 1984 for 75% of mothers to initiate breastfeeding in the hospital setting, with 35% of mothers continuing to breastfeed at six months postpartum (U.S. Department of Health and Human Services (DHHS) & Public Health Service (PHS), 1984). In 1989, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) issued a joint policy statement to maternity services to protect, promote, and support breastfeeding. WHO and UNICEF went on to sponsor the Baby Friendly Hospital Initiative (BFHI) (Barger, 1998) which outlines ten steps that hospitals could use to foster a supportive breastfeeding environment.

By 1991, the Surgeon General increased the six month breastfeeding goal from 35% to 50% (Spisak & Gross, 1991). The Surgeon General and AAP's recommendations have served

as the foundation for the Healthy People 2010 breastfeeding objectives. The current breastfeeding goals are 75% of mothers initiating breastfeeding in the hospital, 50% breastfeeding at six months, and 25% continuing up to the first year of the infant's life (U.S. DHHS & PHS, 2000).

Since 1990, a slow, steady increase has been noted. By 2000, 68.4% of women initiated breastfeeding in the hospital, continuing at a rate of 31.4% by six months, and 17.6% at one year. These breastfeeding rates and trends have been corroborated in other breastfeeding surveillance reports (Kennedy & Visness, 1997; U.S. DHHS & Centers for Disease Control (CDC), 1999). The greatest increase of breastfeeding initiation was found in the younger, less educated population, black women, those receiving WIC benefits, and those women living in the Southern Atlantic region (Ross, 2000). Although increasing, these national figures still fall below the projected target rates.

At the time literature review for this study began, breastfeeding initiation rates for the two regions being studied were 77.7% for Arizona and 76.2% for Nevada in 1999. These rates met the goals of Healthy People 2010. In 2000, Arizona's initiation rate increased by 0.9%, and demonstrated a continued increase in the six month postpartum rate of 1.6%. However, Nevada's rate decreased by 0.8% at initiation and continued to decline to 1.6% at

six months postpartum (Ross, 2000).

There are many factors that can contribute to these breastfeeding rates. Piper and Parks (1996) noted certain predictors for increased length of breastfeeding to be multiparity, being older, married, and Caucasian. Establishment of early prenatal care and prenatal education, breastfeeding intention, higher education, and delaying return to work were also associated with a longer duration. Reasons cited for short-term breastfeeding were incongruence between idealized expectations and early breastfeeding problems, personal feelings of discomfort, and inadequate support (Gulick, 1982; Hawthorne, 1994; Kearney, Cronenwett, & Barrett, 1990; Mozingo, Davis, Droppleman, & Merideth, 2000).

Additional factors associated with the continuation of breastfeeding have been the information and support a woman received from nurses in the immediate postpartum setting. Mothers who were better informed breastfeed longer than those with not enough information (Hoyer & Pokorn, 1998).

The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) supports the role of nurses in promoting breastfeeding and believes it is the nurse's responsibility to foster an environment conducive to breastfeeding (AWHONN, 1999). However, studies vary on the impact inpatient nurses have on breastfeeding.

Statement of the Problem

Despite the preponderance of research on breastfeeding, there continues to be conflicting findings regarding breastfeeding information and support given by inpatient nurses. Further investigation needs to take place to determine the relationship that breastfeeding information and affective support given by inpatient nurses have on breastfeeding success.

Purpose

The purpose of this study was to examine the relationship between maternal perceptions of breastfeeding information and affective support given by inpatient nurses, and breastfeeding success at six weeks postpartum. This study also explored the maternal factors that predicted breastfeeding success at six weeks postpartum.

Research Questions

1. What is the relationship between maternal perceptions of breastfeeding information given by inpatient nurses and breastfeeding success at six weeks postpartum?
2. What is the relationship between maternal perceptions of affective support given by inpatient nurses and breastfeeding success at six weeks postpartum?
3. Is there a difference in breastfeeding success between exclusive and mixed feeders?

4. What are the maternal factors that predict breastfeeding success at six weeks postpartum?

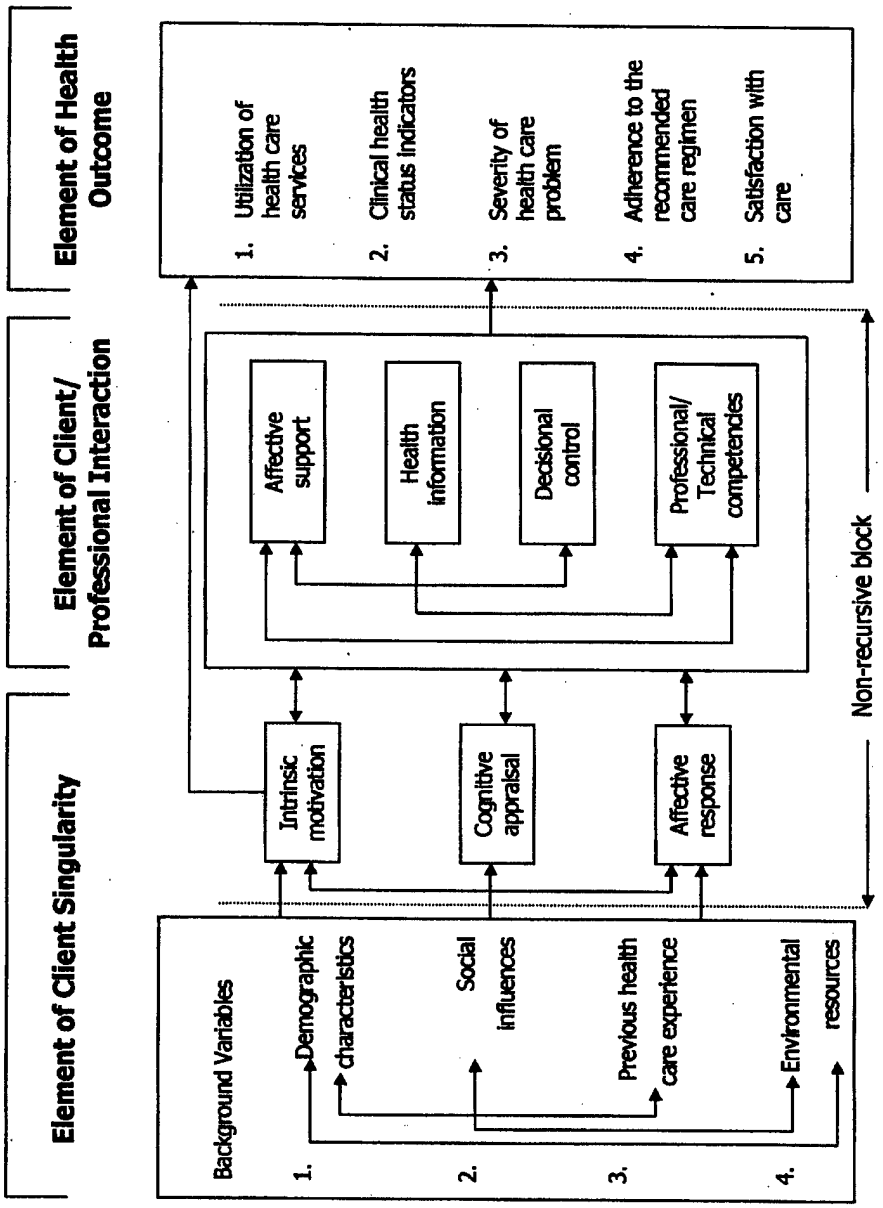
Conceptual Framework

The Interaction Model of Client Health Behavior (Cox, 1982) was an expanded version of previous health belief and health behavior models. It has been conceptualized by Cox as a means to address the unique effect of nursing interactions on health outcomes. This client focused framework (Figure 1) helps to guide nursing practice and research through recognition of the uniqueness of the client as an individual, addresses the professional role in the professional-client interaction, and assists the nurse in tailoring interventions based on the client's individuality.

This was an ideal framework from which to study the dynamics of the client-professional interaction on the breastfeeding process. The many variables identified in Cox's construct of client singularity have been found in the literature to influence the intent, initiation and continuation of breastfeeding. In this study, these variables have been identified as maternal factors.

Cox believed that the client-professional interaction construct must be examined separately from the client's singularity such as motivation, cognition and affect. She felt separate examination of this element would guide

Figure 1. Cox's Interaction Model of Client Health Behavior



Reprinted with permission from: Cox, C. L. (1982). An interaction model of client health behavior: Theoretical prescription for nursing. Advances in Nursing Science, 5, 41-56, © 1982, Aspen Publishers, Inc.

nurses in arriving at tailored interventions. Through application of the model in this study, the nurse could individualize the breastfeeding information and affective support provided to the breastfeeding mother. The tailored interaction could enhance the breastfeeding mother's level of decisional control and ultimately influence the outcome. For purposes of this study, the outcome measure was success of breastfeeding at six weeks postpartum.

Assumptions

The following assumptions support the theoretical underpinnings (Cox, 1982), planning, and implementation of this research. The assumptions were:

1. Breastfeeding is a health behavior.
2. Mothers are capable of making "informed, independent, and competent choices" (Cox, p. 46) about breastfeeding.
3. Nurses are instrumental in fostering an environment conducive to breastfeeding.
4. Mothers who participate are motivated to breastfeed.

Conceptual/Operational Definitions

The following terms were defined within the conceptual framework for the purpose of this research:

Breastfeeding Information

Breastfeeding information has been conceptually defined as the knowledge communicated on breastfeeding essential to initiate and continue breastfeeding. It is one of the

independent variables operationalized by the Information Scale, a 10-item likert scale questionnaire designed by Cornett (1989). It assessed the content of breastfeeding information provided by nurses during the immediate postpartum. One item was reworded to reflect the addition of solid foods instead of the original wording, supplementation of formula.

Additionally, the researcher designed a five-item questionnaire that assessed breastfeeding information the mother received from additional sources prenatally, and during the immediate and two week postpartum interval. The prenatal items included breastfeeding information the mother had received through prenatal or breastfeeding classes, through self-study, or from health care professionals. The last item assessed information received since discharge from the hospital.

Affective Support

Affective support was conceptually defined by Tarkka and Paunonen (1996) as follows:

> affect refers to the appreciation, admiration, respect or love, as well as creating a sense of security; affirmation, which includes reinforcement, feedback, and influencing the individual's way of making decisions; and finally concrete aid, such as objects

> or money, and spending time in helping someone. (p. 1203)

Affective support was the second independent variable that was operationalized by the Affective Support Scale, also developed by Cornett (1989). This was a 12-item likert scale questionnaire that measures the level of breastfeeding support given by nurses in the immediate postpartum.

Maternal Factors (Client Singularity)

Maternal factors were conceptually defined as the combination of unique personal and environmental variables that can be individually expressed and interact with one another (Cox, 1982). Maternal factors were the set of independent variables that were operationally measured by a demographic data collection tool modeled after Cornett's (1989) prenatal questionnaire. The researcher adapted this tool in keeping with the current literature.

Demographic variables. This tool assessed the background variables of age, socioeconomic status, social influences, health care experience, and environmental resources. Socioeconomic status was measured by educational level, income level, marital status, and race/ethnicity.

Social influences. Social influence for breastfeeding was measured by a 12-item likert type social support

questionnaire which assesses the degree of breastfeeding support the mother perceived was available to her prenatally, at two weeks and six weeks postpartum. Social supports to be examined were the mother's partner, other family members and friends, and health care professionals (not including influence by inpatient nurses). Social influence was also measured by assessing the mother's plan to return to employment or school following delivery, and the assessment of helpfulness of community resources utilized after hospital discharge.

Health care experience. Health care experience was assessed by parity, breastfeeding experience, type of delivery, and initiation of breastfeeding.

Environmental resources. Environmental resources were examined through five items designed to assess hospital practices. Items addressed were formula supplementation, the use of pacifiers, providing discharge formula packs, rooming-in routine, and whether post-discharge referrals for breastfeeding were provided.

Intrinsic motivation (intentionality). A dimension of the intrinsic motivational construct was measured by the mother's choice (intentionality) to breastfeed and degree of certainty in fulfilling her intention.

Cognitive appraisal. Cognitive appraisal was measured using Form A of the Breastfeeding Knowledge Questionnaire

(BFKQ) (Hill, 1987), and a parallel questionnaire, Form B. These forms were a 32-item, true/false and multiple-choice questionnaire, designed to assess knowledge on breast milk, milk production, benefits of breastfeeding, breastfeeding techniques, breastfeeding management, and infant contribution to breastfeeding. Form A was used to assess prenatal breastfeeding knowledge. Form B was used to assess breastfeeding knowledge at two weeks postpartum.

Affective response. Affective response was measured by the Coping Confidence Scale. This was a 10-item questionnaire developed by Lawson and Tulloch (1995). The scale measured the maternal confidence to maintain breastfeeding in response to certain breastfeeding situations.

Duration of Breastfeeding

Women who continued to breastfeed, either exclusively or mixed through six weeks postpartum, were considered for inclusion in this research.

Pattern of Feeding

Pattern of feeding was defined as the manner in which the infant received nourishment. Infants who received only breast milk in any form after discharge from the hospital were considered exclusive breastfeeders. Mixed feeders were infants who received breast milk in any form with any amount of formula supplementation after hospital discharge.

Infant Weight Gain

Infant weight gain has been an indicator used clinically to determine if an infant consumed an adequate amount of nourishment for healthy growth and development. The infant weights were obtained at birth, two and six to eight weeks of life, and have been expressed in pounds and ounces, and as a percent change from birth to two weeks and two to six through eight weeks postpartum.

Breastfeeding Success

Successful breastfeeding was conceptually defined as the achievement of both maternal and infant breastfeeding goals. It was the outcome behavior attained through the individualized interaction between the breastfeeding mother and the inpatient nursing professional.

The dependent variable, breastfeeding success, has been operationalized through use of the Maternal Breastfeeding Evaluation Scale (MBFES) (Leff, Jefferis, & Gagne, 1994). This 30-item scale was used to assess maternal enjoyment/role attainment, infant satisfaction/growth, and lifestyle/maternal body image.

Postpartum

This was the period of time following delivery of the infant. This period has been assessed in the immediate (from birth to discharge from the hospital), two weeks, and six weeks following delivery.

CHAPTER 2

Review of Literature

The purpose of this chapter was to present supporting literature for the theoretical framework used, and to provide a review of literature relevant to the variables that impact breastfeeding success. The chapter has been organized by examining the breastfeeding information, affective support, and maternal factors associated with breastfeeding success, and the conceptual framework that guides this study.

Breastfeeding Information

Education for breastfeeding, until recent times, was a "time-honored family function" (Bocar & Riordan, 1999, pp. 241). Factors such as the decrease in the number of mothers breastfeeding, geographical mobility that further decreased close social networks, and mother-baby separation due to increasing numbers of women in the workforce (Hedstrom, 1991) have created the need for information from other sources to enable women in their endeavor to breastfeed. Early discharge from hospitals has also shifted the need for education to the prenatal and post-discharge periods (Biancuzzo, 1997).

These technological and social changes have impacted the teaching priorities and content of breastfeeding education in the hospital setting. Beger and Cook (1998)

examined 23 infant and 14 maternal topics that could be taught during a mother's postpartum hospital stay. Both mothers and nurses ranked infant feeding as a top priority for teaching. DeNatale and Kroeber (1998) also assessed teaching on a mother-baby unit. They found parents rated the value of information received as high for breastfeeding and breast care. The researchers reported that 28% of mothers did not receive any information on breastfeeding or breast care. It cannot be determined from the study if this was a percentage of mothers who chose to bottle feed and therefore did not desire breastfeeding or breast care information. Field and Renfrew-Houston (1991) found that although breastfeeding information was provided, inpatient nurses tended to provide information for the first breastfeeding feeding only, leaving mothers to manage by themselves for subsequent feedings.

Researchers have noted content such as physiology and maintenance of breast milk, stressors that inhibit the let down reflex, infant behaviors, management of common preventable lactation problems (i.e., sore nipples, engorgement), feeding techniques, and awareness of sexual feelings with breastfeeding (Bell & Rawlings, 1998; Biancuzzo, 1997; Chute, 1992; Gulick, 1982) are essential for nursing mothers to maintain breastfeeding. Not only was this information considered requisite to breastfeeding

success, mothers interviewed in a study by Raisler (2000) specifically requested this information be addressed. Preparation for role and relationship changes (i.e., jealous spouse, return to work/school) has also been cited as information necessary for continued breastfeeding (Gulick, 1982; Jordan & Wall, 1993). Biancuzzo (1997) stressed the importance of appropriate referrals for lay or professional assistance. She felt this was imperative to breastfeeding success post-discharge due to teaching time constraints and retention of information for the new mother in the immediate postpartum setting.

Accuracy of breastfeeding information has been addressed as a concern in breastfeeding education. A qualitative study that explored infant feeding choices among primiparas (Keith, 1997) noted maternal need for expertise. However, Keith noted that mothers were dissatisfied with the inconsistent advice they received on breastfeeding. Principles of unrestricted feedings (Slaven & Harvey, 1981) and the use of formula supplementation or pacifiers (Hill, 1991; Righard & Alade, 1997) were sources of inaccurate or conflicting advice given by perinatal nurses.

These findings reflect other studies discussing inadequate, inaccurate or inconsistent information (Coreil, Bryant, Westover, & Bailey, 1995; Cox & Turnbull, 1998;

Engstrom & Fridlund, 2000; Mozingo et al., 2000; Rajan, 1993; Robertson & Goddard, 1997). When information was perceived as inaccurate or conflicting, this served as a source of frustration for the breastfeeding mother and could hinder her breastfeeding efforts. In fact, Sheehan (1999) reported findings that a lay support education program was just as effective as a program led by a midwife childbirth educator in promoting breastfeeding.

One reason for inadequate, inaccurate, or conflicting advice given by nurses was that they lacked the essential knowledge required to properly counsel the breastfeeding mother. A study conducted by Hayes (1981) surveyed 203 hospital staff (194 were nurses). One hundred fifty four participants were knowledgeable on the benefits of breastfeeding. However, there was a wide variation of responses to items dealing with breastfeeding initiation. Many of the participants provided the right answers for the wrong reasons. Hayes attributed this variation to hospital policy or personal beliefs.

A similar study by Crowder (1981) found hospital nurses to have limited knowledge on the factors of successful breastfeeding. Both Crowder and Hayes found the nurse's knowledge on breastfeeding was related to the nurses' level of education. However, their knowledge did not increase with years of nursing experience.

Anderson and Geden (1990) interpreted low mean scores on their psychometric test to suggest no gain in nursing knowledge on breastfeeding in a 10-year span of time. Similar findings by Karipis and Spicer (1999) and Becker (1992) have also been noted for inpatient nurses.

However, Register, Eren, Lowdermilk, Hammond, and Tully (2000) assessed the knowledge of pediatric office nursing staff. The 134 respondents included 12 medical office assistants. Out of a possible 33 items, their mean knowledge score was 25.8 with a standard deviation of 2.5.

Ellis and Hewat (1983) studied the effect an in-service program on breastfeeding had on inpatient nursing practice. No change in practice was demonstrated in their study. Iker and Mogan (1992) investigated the impact a four-week education program had on supplementation. They found no change in the supplementation rate, suggesting the need for ongoing reinforcement to sustain a desired change. Yet Clarke (1996), Martens (2000), and Valdes et al. (1995) did find continuing education to be effective in changing breastfeeding outcomes for both hospital and clinic nursing staff.

In response to improve breastfeeding promotion activities for health care professionals, recommendations by the Surgeon General's Second Follow-up Report (Spisak & Gross, 1991) established guidelines to expand curriculum in

training schools. Although the curriculum development for breastfeeding has been minimal, efforts have been made. The Maternal and Child Health Bureau offered grants to graduate training programs that incorporated breastfeeding education as a part of their curriculum. A cooperative agreement between Wellstart and the University of California at San Diego provided lactation management education throughout the United States. The University of Ottawa's School of Nursing offered a credit course within their curriculum to promote, support, and protect breastfeeding (Moxley, Sims-Jones, Vargha, & Chamberlain, 1997). Recommended curriculum changes were noted in a study conducted by Hellings and Howe (2000). They assessed the breastfeeding knowledge of 405 advanced practice nurses. The subspecialties represented were nurse-midwives, family, pediatric, and women's health nurse practitioners. 58.6% of respondents indicated they received their breastfeeding education from their undergraduate nursing programs, and 82.8% indicated breastfeeding education came from their graduate program.

When to introduce breastfeeding information during a woman's perinatal course has been given consideration in the literature. Black mothers who received prenatal counseling and education on breastfeeding were more likely to initiate and sustain breastfeeding (Timbo, Altekruse,

Headrick, & Klontz, 1996). Reifsnider and Eckhart (1997) reported similar findings among Women, Infant and Children (WIC) participants. Conversely, Hill (1987) noted no significant change in breastfeeding behavior between groups following antenatal education. Although the control group had not been exposed to breastfeeding information from the prenatal breastfeeding education program, receiving breastfeeding information on the postpartum unit could have been a confounding factor that attributed to the findings.

Prenatal classes have been influential in assisting women to make informed choices about breastfeeding. This education served to confirm decisions for those who had already chosen to breastfeed (Handfield & Bell, 1995). Prenatal information was also found to positively influence the decision to breastfeed in women who were previously undecided (Handfield & Bell, 1995; Oxby, 1994). However, even though women welcomed breastfeeding information through antenatal classes, again concerns were expressed about the adequacy and consistency of the education provided (Britton, 1998; Nolan, 1997).

Pobocik et al. (2000) examined the efficacy of a program titled, Early Experiences and Counseling for Effective Lactation (EXCEL). Young mothers, age 19 and under, and enrolled in the WIC program were eligible to participate. The intervention group participated in the

participants in her study, 65.6% felt they received adequate information. However, she found that mothers who perceived the need for more information in several content areas during their hospital stay were more likely to supplement their infants at four weeks after delivery. Interestingly, her findings were not supported when analyzed at eight weeks postpartum.

Schy, Maglaya, Mandelson, Race, and Ludwig-Beymer (1996) reported no increase in breastfeeding satisfaction and duration for women receiving an inpatient lactation education session. Notably, Hawthorne (1994) found the shorter the hospital influence, the greater the association with successful breastfeeding. Cornett (1989) also found women experiencing a shorter length of hospital stay did not perceive the need for additional information or support from inpatient nurses.

Emphasis has been placed on the influence of post-discharge breastfeeding information. Due to shortened hospital stays, women have been discharged prior to their milk coming in. Much of their hospitalization has been spent with their newborn in learning the techniques of breastfeeding. Yet mastery and the occurrence of many breastfeeding problems do not arise until after discharge (Biancuzzo, 1997; Hill, Humenick, & West, 1994; Kearney et al., 1990; Mozingo et al., 2000).

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Community-based referrals were found to be an effective resource for the breastfeeding mother. Moore et al. (1991) found that a community hospital-based approach that provided follow-up after hospital discharge improved breastfeeding success. They defined success in terms of patient satisfaction. Therefore, it is difficult to determine program effectiveness in terms of the continuation of breastfeeding over time.

Other innovative programs such as a breastfeeding drop-in center (Pastore & Nelson, 1997), peer support (Arlotti, Cottrell, Lee, & Curtin, 1998; Vari, Camburn, & Henly, 2000) and peer counselor programs (Schafer, Vogel, Viegas, & Hausafus, 1998; Shaw & Kaczorowski, 1999) have been found to improve the duration of breastfeeding through education and support in the postpartum period.

One study evaluated a program designed to help mothers in their transition from hospital to home. Becker, Palfrey, and Wise (1998) used five clinical indicators to determine program effectiveness; kept appointments, perinatal records being transferred into the infant's medical records, decreased emergency room visits, improved immunizations; and breastfeeding at the first infant clinical visit. Although four of the clinical indicators demonstrated the effectiveness of the program, the rate of breastfeeding remained unchanged.

Principles of learning incorporate various teaching methods. A modality previously mentioned was the use of one-to-one counsel. In one study, both hospital nursing staff and mothers felt individual teaching was effective (Beger & Cook, 1998). The study participants also found books and handouts to be effective, whereas, video and group classes were rated effective by only 15% of participants.

Participants in a study conducted by Britton (1998) felt discussion was more beneficial than formal class lecture. This was supported by Sheehan's (1999) study examining a peer and husband/partner support class. Schy et al. (1996) also noted informal versus formal instruction to be perceived as more beneficial.

Affective Support for Breastfeeding

Driscoll (1992) viewed the nurse as an influential member of the mother's social support network. As a coach and advocate, it was crucial that the nurse assisted the mother to achieve a sense of accomplishment. Encouraging the breastfeeding mother to verbalize concerns, while allowing her to maintain her self-esteem, was an essential part of the client-professional interaction to promote the success of breastfeeding.

Although there has been overlap in definitions of support and information in the literature, support has been

considered as the provision of information in a supportive, therapeutic manner. Support has also been viewed in terms of dimensions that are tangible (offering time or skills) and emotional (providing affection)(Matich & Sims, 1992).

Matich and Sims (1992) found that informational support was predictive of breastfeeding. Women intending to breastfeed not only perceived they had more informational support, but also utilized a variety of informational sources such as friends, family, health care professionals, and prenatal classes. Hoyer and Horvat (2000) noted that written instruction, as well as personal encouragement favorably influenced breastfeeding practices. Conversely, a study of low-income pregnant women found no significant relationship between breastfeeding intention and informational support given by health professionals (Humphreys, Thompson, & Miner, 1998). Lactation consultants were perceived as giving more positive encouragement to breastfeeding mothers than nurses or physicians (Humenick et al., 1998; Quarles, Williams, Hoyle, Brimeyer, & Williams, 1994).

Although the results of several studies varied regarding support given by health professionals, findings were consistent in that most mothers stated they received support from a close family member (Bentley et al., 1999; Giugliani, Caiaffa, Vogelhut, Witter & Perman, 1994;

Humphreys et al., 1998; Matich & Sims, 1992; Raj & Plichta, 1998). Interestingly, Tarkka and Paunonen (1996) found 83% of the women surveyed stated their support persons received little to no guidance by nurses in the hospital. Lazzaro, Anderson, and Auld (1995) surveyed 151 physicians, nurses and nutritionists. They found that the health care professionals recognized they were not the major source of influence in breastfeeding support. However, no medical professionals suggested incorporating the woman's family or friends into breastfeeding counsel as an effective means to encourage breastfeeding.

Support offered by health care professionals varied based on breastfeeding experience. Tarkka, Paunonen, and Laippala (1998) found a demonstrated need by first-time mothers for professional guidance and support. In a previous study, Tarkka and Paunonen (1996) found younger, first-time mothers received more affirmative support than the older, more experienced mothers.

Notably, in a study conducted by Rajan (1993), one mother who previously breastfed felt more individual nursing attention could have prevented pain from cracked nipples and mastitis that she experienced with both her first and second baby. Inexperienced multiparas who received mixed or negative advice were found to have decreased their breastfeeding level (Humenick et al.,

1998).

Attitude plays a role in the support a breastfeeding mother perceives she gains from the health care professional. Bernaix (2000) studied hospital nurses' attitudes toward support of the breastfeeding mother. The nurses' attitude scores indicated a moderately positive attitude toward providing breastfeeding support. Maternal perceptions of breastfeeding support offered by these nurses also indicated a moderate degree of supportive behavior. This study found the best predictor of supportive behavior for the nurses was their breastfeeding knowledge.

Patton, Beaman, Csar, and Lewinski (1996) examined hospital nurses' attitudes toward their role in supporting breastfeeding. The nurses cited organizational constraints as a barrier to providing adequate support. Early discharge, short staffing, and other more pressing priorities prevented the nurses from offering new mothers one-to-one counseling. A study conducted by Winikoff, Laukaran, Myers, and Stone (1986) supported the findings of Patton et al. (1996).

Nursing information provides only a part of the reinforcement that should be necessary to sustain a healthy behavior (Coombs, Reynolds, Joyner, & Blankson, 1998). The role of support is also a necessary component (Pugin,

Valdes, Labbok, Perez, & Aravena, 1996; Reifsnider & Eckhart, 1997). Townsend (1982) found that breastfeeding information, support, and guidance given by nurses were more effective in breastfeeding success than information alone.

Libbus (1994) noted that prenatal breastfeeding education was widely available, yet support in the postpartum seemed limited. Without the influence of both information and support, the duration of breastfeeding was limited (O'Campo, Faden, Gielen, & Wang, 1992). When support was available in the postpartum period, duration significantly increased (Porteous, Kaufman, & Rush, 2000).

Maternal Factors Associated with Breastfeeding Success

Demographic Variables

Age. Several studies report age as a variable predictive of breastfeeding duration (Barber, Abernathy, Steinmetz, & Charlebois, 1997; Nolan & Goel, 1995; Piper & Parks, 1996). The older a woman is, the more likely she is to breastfeed. However, Perez-Escamilla et al. (1998) examined various demographic data in a Latino population. They found no statistical difference between breastfeeding in women younger or older than 18 years of age.

Race/ethnicity. The race and ethnic background of an individual is a factor in the breastfeeding decision. Ross' Mothers Survey (2000) reflected the highest

breastfeeding initiation rate among white and Hispanic women. Although rates were lowest for African-American women, statistically this group had the largest percent change since 1990. No data was collected on Asian/Pacific Islander or Native American women.

Ethnicity also plays a role in terms of who the mother relies on for her breastfeeding support. Kessler, Gielen, Diener-West, and Paige (1995) cited the male partner as influential for white women and the grandmother as influential for Hispanic women. Sweeney and Gulino (1987) unexpectedly found the partner to be a stronger influence for the Hispanic woman. Libbus (2000) found Hispanic women had a positive attitude toward breastfeeding and felt supported by their significant others in the breastfeeding decision. Raj and Plichta (1998) found Japanese adolescents gained support from their mothers.

Kessler et al. (1995) found friends to be more influential for the African-American woman. However, this finding was not confirmed in a study that looked at 441 African-American women recruited from four WIC clinics in Baltimore (Bentley et al., 1999). In this study, opinions of female relatives and the baby's father were influential on the maternal intent to breastfeed. An African-American woman's intent was found to be further supported when information about breastfeeding was provided (Aikin, 1999).

A multi-ethnic study conducted in Hawaii (Novotny et al., 2000) found Filipino women were at a higher risk for early cessation of breastfeeding than when compared to other ethnic groups. Additionally, mothers who were identified to be at risk for early weaning were those born outside the U. S. This finding was supported in a study by Rossiter and Yam (2000). Rossiter and Yam qualitatively examined the perceptions of Vietnamese women born in Vietnam, but who currently resided in Sydney, Australia. Barriers cited were language, health professional attitudes, and inadequate social or family support in the postpartum period.

Education. Level of education has been linked to breastfeeding initiation. Women who were college educated demonstrated both higher initiation and increased duration of breastfeeding (Piper & Parks, 1996; Ross, 2000). Japanese women in Hawaii had a high rate of breastfeeding initiation, however experienced a shorter duration of breastfeeding (Novotny et al., 2000). A consideration for this finding was that these women were highly educated. However, they were more likely to return to work, which contributed to their early weaning practices.

Discussion with a physician about infant feeding was more prevalent in Asian-American mothers than Latino, African-American, and Caucasian mothers. However, when

educational level was considered, the association was found to exist because of the physician discussions rather than a relationship to ethnicity. Breastfeeding knowledge was also more closely associated with educational level than ethnicity (Williams & Pan, 1994).

Income. Income has been associated with breastfeeding initiation and success (Janke, 1993). Historically, social affluence was associated with a higher incidence of artificial infant feeding. It was the social elite who could afford artificial food or wet-nursing. Those who were poorer were more likely to breastfeed their young (Fildes, 1986).

Currently in the United States, there has been a reverse trend. Social affluence affords mothers better educational opportunities, earlier access to prenatal care, as well as the ability to choose when to return to work. These factors all have been shown to impact breastfeeding practice (Nolan & Goel, 1995; Piper & Parks, 1996).

Social Influence

Family, friends, health care professionals. A supportive social environment has been shown to be influential in the success of breastfeeding (Lawson & Tulloch, 1995). Susin et al. (1999) found the duration of breastfeeding increased if breastfeeding counseling included the support person.

Women intending to breastfeed rated their mothers as a very influential postpartum support (Matich & Sims, 1992). Humenick, Hill, and Wilhelm (1997) examined a sister's encouragement for breastfeeding at two, four, five, and six weeks postpartum. Although not predictive, support from a sister was found to be significant in subsequent breastfeeding levels.

The role of the partner has also been found to impact the intent, initiation, and duration of breastfeeding (Matich & Sims, 1992; Raj & Plichta, 1998; Sharma & Petosa, 1997). Marital status has been cited as a variable associated with breastfeeding intention. Yet, Humphreys et al. (1998) found no significant correlation between marital status and breastfeeding intention of women with breastfeeding experience. Isabella and Isabella (1994) found women who breastfed enjoyed a higher level of marital satisfaction and less reliance on friends and outside support than those women who bottle fed.

An association was found in the degree to which friends influenced a woman's decision to or not to breastfeed (Matich & Sims, 1992). When a woman was self-reliant and less dependent on the opinions of her friends, she was more likely to breastfeed. However, when the woman was more dependent on her friend's opinions and found her friends were not supportive of breastfeeding, she was more likely

to bottle feed.

In a study conducted by Lazzaro et al. (1995), support of breastfeeding by health care providers revealed that less than half of the providers (obstetricians, pediatricians, family practitioners, doctors of osteopathy, and physician assistants) advocated breastfeeding to a woman who had already decided to bottle feed. Freed et al. (1995) found that despite limited training physicians and residents (obstetricians, pediatricians, and family practitioners) received on breastfeeding, 80% still felt confident in their ability to effectively counsel the new mother. A similar finding of health care provider attitudes was noted in a study of 116 obstetricians (Howard, Schaffer, & Lawrence, 1997).

Social influence (employment). Legislation introduced to promote breastfeeding in the workplace included providing tax incentives for companies deemed breastfeeding friendly and ensuring women the right to express milk at work. The most current piece of legislation signed into law was the Treasury Postal Appropriations Bill, which included Congresswoman Carolyn Maloney's Right to Breastfeed Act. This bill permitted breastfeeding on all federally funded property (BFHI News, 2000). Despite these and other legislative efforts, difficulty with a woman's return to work or school have continued to be one of the

frequently cited barriers in the initiation and duration of breastfeeding (Spisak & Gross, 1991; Hill, Humenick, Argubright, & Aldag, 1997).

Bridges, Frank, and Curtin (1977) measured the attitude of employers. Findings showed employers with previous exposure to breastfeeding were more verbally supportive. However, 64% of the study participants stated they would not support the woman in nursing her infant or expressing milk at the workplace.

Delaying the return to work has been associated with longer breastfeeding duration (Piper & Parks, 1996). Yet, return to work does not signify premature weaning for all women. Hedstrom (1991) noted 29% of women choosing to combine breastfeeding and employment were still breastfeeding by nine months postpartum. Of note, however, Hedstrom points out that these women were professional, middle class, well-educated women whose demographic association predicted longer durations of breastfeeding.

Health Care Experience

Parity/breastfeeding experience. Ross (2000) revealed that primiparous women initiated breastfeeding at a rate five percent above multiparous women. By six and 12 months, their rates fell below multiparous women by approximately three percent. Hill, Humenick, Argubright, et al. (1997) found little difference in breastfeeding

duration between primiparous women, multiparous women with breastfeeding experience, and multiparous women without breastfeeding experience. Kieffer, Novotny, Welch, Mor, and Thiele (1997) examined parity in relation to infant feeding choices at the time of hospital discharge. They noted primiparous women were more likely to chose both breast and bottle feeding (mixed feeding), whereas the multiparous women chose formula feeding. However, a consistent pattern for both groups emerged in that women were much more likely to breastfeed if the decision was made prior to becoming pregnant than if made during the pregnancy or after delivery.

Delivery type. The impact of cesarean section has been studied with mixed findings. Perez-Escamilla, Maulen-Radovan, and Dewey (1996) revealed cesarean birth as a risk factor for failure to breastfeed, while Gulick (1982) reported that cesarean delivery did not impede breastfeeding efforts.

Mothers undergoing cesarean section generally require intravenous fluid, anesthesia and postoperative pain management. Rajan (1994) noted the type of labor and birth medication can influence how soon breastfeeding was initiated after delivery. However, Biddle (1994) noted that the anesthetic related medications were not sufficient in amount to adversely affect the newborn.

Initiation time to breastfeed after delivery. Although an aspect of hospital policy and practice, conceivably this variable is a factor in the maternal perception of her health care experience following delivery. Its role is discussed below.

Environmental Resources (Delivery Setting)

Hospital policy and practice have been identified as factors influencing breastfeeding actions (Renfrew-Houston & Field, 1988; Winikoff et al., 1987). In an effort to improve practices that could impact breastfeeding during hospitalization, WHO and UNICEF (1992) initiated the Baby Friendly Hospital Initiative (BFHI). This protocol outlined research based guidelines that hospitals could implement to improve not only initiation, but also the continuation of breastfeeding after hospitalization (Saadeh & Akre, 1996).

Wright, Rice, and Wells (1996) examined the duration of breastfeeding at one and four months postpartum with regard to five of the BFHI's 10 steps. They found the duration of breastfeeding increased for mothers who: (a) initiated breastfeeding within 30 minutes of delivery, (b) were able to room-in with their infants, (c) reported no use of pacifiers, (d) reported no use of supplementation, and (e) were provided with names of support groups prior to discharge. The researchers also found an increase in

breastfeeding duration for mothers who did not receive formula gift packs at discharge.

Though positive breastfeeding outcomes have been achieved following the 10-step evidence-based guidelines, a meta-analysis conducted by Perez-Escamilla, Pollitt, Lonnerdal, and Dewey (1994) found the impact of early initiation of breastfeeding to be unclear. Their findings concurred with the positive effects of rooming-in and the adverse effects of formula discharge packs. However, they noted that supplementation of less than 48 mL of formula per day did not adversely affect a mother's ability to breastfeed.

Janken, Blythe, Campbell, and Catter (1999) conducted a research utilization study to determine if changes in hospital practices changed breastfeeding behaviors. They found that despite a change in nursing practice, it did not influence the time to initiate breastfeeding.

Intrinsic Motivation (Intentionality)

Although intrinsic motivation is a construct based on a specific theory of motivation, a dimension of motivation is intentionality. According to Cox (1982), motivation is a process by which the client actively and rationally chooses a behavior that has been shown to be independent of the health care provider. Keith (1997) explored the decision making process a woman goes through in choosing to breast

or bottle feed her baby. Although expert advice was used for guidance, ultimately, it was the woman's decision. If the woman chose to breastfeed, this decision translated into intent.

Intent has been linked as one of the most important factors in the continuation of breastfeeding (Duckett et al., 1998). Lawson and Tulloch (1995) found that women who were fully breastfeeding at three months postpartum had intended to breastfeed for at least that long. Many researchers have found that women who breastfeed longer make the decision to breast instead of bottle feed prior to the birth of the infant (Coreil & Murphy, 1988; Cox & Turnbull, 1994; Kieffer et al., 1997; Oxby, 1994).

Cognitive Appraisal

The motivation or intent to breastfeed can be influenced by a person's knowledge of breastfeeding. The woman can consider the benefits, adaptation to lifestyle, congruency with beliefs and expectations, as well as determine her support systems (Gigliotti, 1995; Hughes & Rees, 1997; Lothian, 1994; Mozingo et al., 2000).

Susin et al. (1999) demonstrated a relationship between an intervention that increased knowledge of breastfeeding and the duration of the breastfeeding practice. Gulick (1982) reported that gaps in knowledge about breastfeeding contributed to the cessation of breastfeeding. However,

even though mothers understood the benefits of breastfeeding, some still chose to bottle feed for other reasons (Keith, 1997).

Affective Response

Emotions generated in response to breastfeeding can play a large role on intent, initiation, and success of breastfeeding. If the breastfeeding mother experienced stress, this could impact the let-down reflex. Feelings of self-doubt could hinder efforts to initiate breastfeeding. On the other hand, a mother who was able to problem-solve could reduce anxieties when she encountered breastfeeding difficulties (Cox & Turnbull, 1998).

Interestingly, Lawson and Tulloch (1995) found that confidence to overcome breastfeeding problems was predictive of successful breastfeeding only in mothers with previous breastfeeding experience. This finding identified the separate needs of first time mothers which should be considered in order to facilitate positive breastfeeding outcomes.

Duration

Breastfeeding duration is defined as a specific length of time a woman breastfeeds (Langley, 1998). Healthy People 2010 objectives advocate the initiation and continuation of breastfeeding for at least one year (U.S. DHHS & PHS, 2000). Research conducted by Gulick (1982)

defined duration in terms of breastfeeding beyond four weeks. Humenick et al. (1997) addressed breastfeeding in terms of limited (less than five months) or sustained (greater than five months).

Less strict conceptualization of duration was evidenced in a study by Adair et al. (1993). They defined breastfeeding duration as an infant receiving breast milk at any time during their survey period of 24 months. Schafer, Vogel, Viegas, and Hausafus (1998) also loosely defined breastfeeding as any mother attempting at least once to breastfeed.

The first six weeks postpartum can be a very stressful time for new mothers. Hill et al. (1994) surveyed mothers who were primiparas, and multiparas with and without breastfeeding experience. All of these mothers reported nipple pain, breast engorgement, and fatigue, with fatigue being the primary concern that interfered with the desire to breastfeed. Infant concerns of stools, hiccups, too frequent feedings, and fussiness were also listed by mothers during the six week timeframe.

These maternal and infant concerns can become barriers to duration. Kearney et al. (1990) found 25% to 30% of mothers stopped breastfeeding by one month of age due to unresolved breastfeeding concerns.

Pattern of Infant Feeding

Pattern of infant feeding has been measured in terms of exclusivity. The joint statement by WHO/UNICEF generated the philosophy that all women should be supported in the practice of exclusive breastfeeding of their infant from birth to at least four to six months of age (WHO, & UNICEF, 1989). Because human milk is species specific, providing the best possible nutrition for the infant, the guideline is to supplement only as medically indicated (AAP, 1997).

Another benefit of limited supplementation has been maintenance of an adequate breast milk supply. One of the most common reasons for cessation of breastfeeding was the perception of an insufficient milk supply (Humenick & Hill, 1996). When mothers minimize supplementation, adequate milk supply has been attributed to increased duration of breastfeeding.

Labbok and Krasovec (1990) discussed the need to define the patterns of breastfeeding in a consistent manner to improve comparability between studies. The described patterns were full, which was defined as exclusive and almost exclusive breastfeeding; partial, defined as high, medium, and low; and the token breastfeeder. Exclusive breastfeeding meant only breast milk was given to the infant. Almost exclusive included infrequent vitamin, mineral, water, juice, or other ritualistic feeds in

addition to breastfeeding. Partial was indicated by percentage of breastfeeds, with high reflecting more than 80% breast milk given to the infant. Medium was between 20% to 80% breast milk given to the infant, and low was less than 20% breast milk was given to the infant. Token was described as minimal, occasional, or irregular breastfeeds.

An attempt to further quantify these categories have been made in terms of number of breastfeeds and number of formula feeds to calculate a percentage of feeds (Hill, Humenick, Argubright et al., 1997; Vari & Henly, 2000). Butte and Garza (1985) analyzed studies on human milk intake. The volume ranged from 576 to 1187 mL per day at one month of life to 601 to 1263 mL per day at two months of life. If rates of metabolism of both breast milk and formula by the infant were equivalent, the schema presented by Labbok and Krasovec would be appropriate. However, Butte and Garza (1985) noted the formula fed infant took in 30% more calories than the breast fed infant by four months of age. Despite the lower intake, breast fed infants grew at a rate comparable to the formula fed infant. Therefore, accurate determination of breast milk to formula intake for mixed feeders can be difficult.

Infant Weight Gain

Growth is one measure of an infant's nutritional

status. Length has been found to be the most useful measurement. However, it is difficult to accurately obtain. Weight has been another valuable indicator of growth. This measure can be more reproducible than height, particularly with the advent of accurate scales (AAP, 1998). The dilemma with infant weight when based on growth charts that under or overestimate the normal growth curve for breastfed infants is that it can mislead the clinician to advise premature supplementation and early weaning practices of the breastfed infant.

Because of well documented studies that reflect differences in growth velocity of exclusively breast fed, mixed, and formula fed infants (Nelson, Rogers, Ziegler, & Fomon, 1989; Dewey, Heinig, Nommsen, Peerson, & Lonnerdal, 1992), much discussion has been made as to the reliability of standardized growth charts for all infants, regardless of feeding pattern. Most growth charts have reflected the weight gain pattern of formula fed infants. Three standards, Harvard, U.S. National Center for Health Statistics (NCHS), and the WHO have all been viewed as an inappropriate measure for breastfed infants (Dewey, 1998; Ho Chee, 1997).

A revision of the 1977 NCHS percentiles was updated and published in May 2000 by the U.S. DHHS and CDC. Data was drawn from the National Health Examination Surveys

conducted between 1963 and 1994. This data set has been shown to be more representative of racial differences in growth. It also provides a more accurate reflection of breastfed and formula fed infants. Current work is being done by WHO to design a growth chart for exclusive and almost exclusively breast fed infants. The projected completion was for the year 2002 (Kuczmarski et al., 2000; Roberts & Dallal, 2001).

Breastfeeding Success

The success of breastfeeding has been examined using a variety of outcomes to define its meaning. Some researchers examined success in terms of sustainment, while others investigated the physiological and psychological benefits of breastfeeding as standards of success (Langley, 1998). The standard by which breastfeeding success has been conceptualized for this study has been in terms of maternal evaluation of her breastfeeding. Notably, sustainment was an inherent part of the study, as all mothers included were still breastfeeding at six weeks postpartum.

The term satisfaction has been used interchangeably with success. Leff, Gagne, et al. (1994) examined the phenomenon of breastfeeding success. They found five concepts relevant to successful breastfeeding: (a) infant health; (b) infant satisfaction; (c) maternal enjoyment;

(d) attainment of desired maternal role; and (e) lifestyle compatibility. They noted a woman's overall assessment of her breastfeeding success takes into consideration all aspects of maternal and infant factors. For the woman to perceive success in breastfeeding, there needs to be a balance between the maternal and infant factors within the five concepts. The authors describe this as the core concept of working in harmony.

Humenick et al. (1997) measured breastfeeding satisfaction with the Maternal Infant Breastfeeding Satisfaction Scale. This was a subscale of the H & H Lactation Scale developed by Hill and Humenick (1996) for the purpose of measuring insufficient milk supply indicators. They found a significant correlation between women who rated high levels of breastfeeding satisfaction to the continuation of breastfeeding. Tarkka et al. (1998) examined breastfeeding success in terms of coping with the breastfeeding experience. The stronger the woman's coping supports, the increased likelihood the woman experienced sustained breastfeeding.

Conceptual Framework

Several studies have used the Interaction Model of Client Health Behavior (Cox, 1982) as a theoretical framework. Barnes (1995) explained that the nurse's sustained interaction with low-income African-American

mothers decreased infant morbidity and mortality. Lock and Vincent (1995) used the model to explain the role of client singularity factors on the effects of premarital sexual intercourse.

Brown (1992) further established the concept of tailoring within the client-professional interaction. This study tested the definition of individualized care through comparison of naturally occurring interactions to the hypothesized definition of the client-professional interaction. Findings did reveal the majority of interactions fit the client's needs, supporting the empirical existence of tailoring.

Since the model's inception, several studies have evaluated its merit. One evaluation of the model by Carter and Kulbok (1995) determined the model to be grounded in many disciplines and useful in the application of research and practice.

Summary

The literature addresses an association between education and support to breastfeeding success. The inpatient nurse should be attuned to the complexities of breastfeeding in order to effectively interact and intervene in the woman's decision to initiate and maintain breastfeeding.

CHAPTER 3

Methodology

This chapter discusses the research process used to examine the research questions. Research design, sample and setting, plan for data collection and analyses, and study limitations are addressed.

Design

The research design was a prospective descriptive study. It examined the relationship between breastfeeding information and affective support given by inpatient nurses, maternal factors, and breastfeeding success. The variables of interest were studied prenatally, at two weeks, and six weeks postpartum.

Sample

Participants were selected through convenience sampling. Women who were 18 years of age or older, expecting a singleton delivery, able to read and write English, desiring to breastfeed, and voluntary participants following informed consent, were initially included. To remain eligible, participants delivered a term infant (37-42 weeks) without maternal or neonatal complications that required intensive care.

For a power of 0.8, $\alpha = .05$ with 19 predictors, and a medium effect ($R^2 = .13$), a minimum sample size was computed at 145 participants. Recruitment took place across five months, from April to August 2001, yielding 230 mothers who were still breastfeeding at six weeks postpartum.

Setting

Initial recruitment was conducted at prenatal education sessions sponsored by a total of eight hospitals. Hospital selection was based on the type of delivery care services each institution provided for the new mother (Table 1). All sites had lactation consultants available, either as separate staff or as staff nurses who had obtained additional certification. Although some facilities' nursery and postpartum units were staffed separately, each hospital offered rooming-in to the mother.

Table 1

Description of recruitment facilities

Hospital/ Facility	Location	Monthly Deliveries	Mother/Baby Unit	Nursery Level
A/Government	Phoenix	35	Combined	I
B/Private	Phoenix	600	Separate	II
C/Government	Las Vegas	50	Combined	I
D/Private	Las Vegas	250	Combined	I
E/Private	Las Vegas	500	Separate	III
F/Private	Phoenix	660	Separate	III
G/Private	Phoenix	400	Separate	II
H/Private	Las Vegas	200	Combined	I

Data Collection

Procedures

The researcher obtained permission to conduct the study from her thesis committee, the Institutional Review Board (IRB) at Arizona State University, and from each institution in which subjects were recruited. Once approval was granted, the researcher initiated the recruitment process.

The researcher attended each institution's prenatal classes and provided information about the study through use of a standardized verbal script (Appendix A). Informed consent was obtained from women who volunteered to participate in the study, and a copy of the informed consent was provided to each participant (Appendices B through H).

Study participants were asked to complete a record keeping card (Appendix I) and prenatal questionnaire (Appendix J) during the prenatal session. Participants received the two week (Appendix K) and six week (Appendix L) postpartum questionnaires in envelope packets that contained a self-addressed return envelope for their convenience. They were provided with instructions to complete the questionnaires at the respective postpartum times and return them to the researcher in the envelope provided.

The record keeping card was coded to maintain

participant confidentiality. All records were kept confidential and were available only to the researcher, her thesis committee, and respective individual hospitals.

The card data was entered into a database using a data management program, Microsoft Access 2000, to generate reminder notifications to study participants one week prior to the participant's due date. If the researcher was unable to contact the participant by phone or e-mail, then a reminder letter was sent to the address provided by the participant on the record-keeping card.

The database was also used by the researcher to track receipt of questionnaires. If no response was received from the participant by four to six weeks postpartum (for the two week survey), and by eight to 10 weeks postpartum (for the six week survey), the researcher made every attempt to contact the participant. This allowed the participant every opportunity to take part in the study. However, if the participant was unable to be contacted or desired to not continue participation, she was dropped from the study.

Instruments

For this study, a total of three questionnaires (prenatal, two week, and six week postpartum) were utilized. All permission letters to conduct the study and to use established instruments can be found in Appendix M.

The prenatal questionnaire was comprised of three

sections designed to gather participant demographic data, and assess cognitive appraisal and affective response to breastfeeding. The first section was a modification of a data collection tool designed by Cornett (1989). It was used to collect basic demographic information such as age, martial status, socioeconomic status, parity/breastfeeding experience, plans to return to work/school, and breastfeeding intentionality/goals which were variables identified in the literature that relate to breastfeeding success.

The social support scale was designed by the researcher to assess potential sources of social influence the mother had available for breastfeeding. Items included were the father of the baby, maternal and paternal family members (mother, sister, and grandmother), friend(s), and health care professionals to include the obstetrician, pediatrician, nurses (not including inpatient nurses), and lactation consultants.

The scale ranged from two to five, with two indicating never supportive, and five indicating always supportive. Social influences were assessed at the prenatal, two week, and six week postpartum periods. This scale was reviewed by the researcher's thesis committee, a board-certified pediatrician, a lactation consultant, and two breastfeeding mothers (who did not participate in the study). Although reliability for this tool was not established prior to its

implementation, reliability for this sample was 0.68 (N = 228).

A second section of the prenatal questionnaire was the breastfeeding coping confidence scale that was modified by the researcher to reflect a five point likert type scale, with one being very unconfident, and five being very confident. The original scale ranged from one to six, using the same directional rating. This 10-item tool was used to determine the mother's confidence with breastfeeding under certain circumstances. It assessed the concept of affective response. The scale was reliable at $\alpha = 0.86$. For this sample, reliability was 0.91. No reported validity was noted (Lawson, & Tulloch, 1995).

The third section of the prenatal questionnaire was the Breastfeeding Knowledge Questionnaire (BFKQ), Form A. This tool was designed by Hill (1987), and shares a parallel form of the questionnaire, Form B, which was used in the two week postpartum questionnaire. Both tools contain 32 items with a mix of true/false and multiple choice questions. Content was originally based on Gulick's (1981) questionnaire and adapted by Hill. Content validity was established through the assistance of two maternal-child nursing instructors who assisted in item phrasing and leveling vocabulary appropriate for the intended user. Readability was also tested using six junior high students. These forms were then pilot tested on 186 high school

students, with a mean scores of 19.25 and 19.97 (raw scores based on 32 items) for Form A and Form B respectively. Hill reported a reliability (K-R 20) of 0.63 and 0.66 for Form A and B respectively. For this sample, reliability was 0.59 and 0.41 respectively.

The two week postpartum questionnaire consisted of four sections. The first section of this questionnaire was a data collection tool originally designed by Cornett (1989) and modified by the researcher to obtain essential data on delivery type, prenatal education, social supports for breastfeeding, hospital practices that influence breastfeeding success, use of hospital referrals, infant weight gain, duration and pattern of feeding, and reason(s), if any, for cessation of breastfeeding.

The second and third sections of this questionnaire were developed by Cornett (1989). The second section assessed the breastfeeding information given by inpatient nurses. Method of teaching items were addressed, along with an eight-item assessment of maternal perceptions on breastfeeding information received from inpatient nurses.

The breastfeeding information scale was a 10-item likert scale assessment of the content taught for breastfeeding. Responses ranged from one to five, with one representing strongly disagree, and five representing strongly agree. One item was reworded to reflect addition of solid foods versus addition of formula supplementation.

This instrument was pilot tested by Cornett on 21 first time mothers who were breastfeeding. Cronbach's alpha for this scale was reported at 0.86. For this sample, reliability was 0.84.

The third section included the breastfeeding affective support questionnaire. This was a 12-item five point likert scale assessment of the affective support given by inpatient nurses for breastfeeding. Responses ranged from one to five, with one representing strongly disagree, and five representing strongly agree. This instrument was pilot tested by Cornett with 30 breastfeeding mothers. The original scale contained 16 items, but due to low correlational scores, four items were dropped. Cronbach's alpha on the remaining 12 items was 0.94. For this sample, reliability was 0.95.

Both instruments were reviewed by a "pediatrician specializing in breastfeeding, a doctorally prepared maternal-child nurse, two masters prepared maternity nurses, and a lactation specialist" (Cornett, 1989, p. 40). Their recommended changes were made prior to reliability testing.

The fourth section of this questionnaire was the parallel form of the BFKQ, Form B. This tool was used to measure the postpartum knowledge of mothers on breastfeeding after discharge from the hospital.

The six week postpartum questionnaire consisted of two

sections. The first section contained similar information as the two week postpartum survey in order to capture essential data on perception of helpfulness of breastfeeding resources, social supports for breastfeeding, infant weight, breastfeeding status, reason for cessation of breastfeeding, and pattern of feedings from two to six weeks postpartum.

The second instrument was the Maternal Breastfeeding Evaluation Scale (MBFES). This was used to directly assess breastfeeding success. The MBFES was designed by Leff, Jefferis, et al. (1994). This was a 30-item questionnaire measuring maternal enjoyment/role attainment, infant satisfaction/growth, and lifestyle/maternal body image. The scale ranged from one, strongly disagree, to five, strongly agree.

Its content was based on an earlier qualitative study conducted by Leff, Gagne, et al. (1994) where the researchers assessed maternal perceptions of successful breastfeeding. Content validity was first established through a series of three questionnaires reviewed by a panel of six women who participated in the original study. This resulted in a 68-item questionnaire, which was further reviewed by a panel of five perinatal nurses and one lactation consultant. The revised questionnaire contained 56 items. A pilot test of these 56 items was conducted, resulting in a test-retest procedure. Factor analysis of

the test-retest results led to the current revised 30 item scale.

Cronbach's alpha reliability was 0.93 for the total scale, and 0.93 for the Maternal Enjoyment/Role Attainment subscale, 0.88 for the Infant Satisfaction/Growth subscale, and 0.80 for the Lifestyle/Maternal Body Image subscale. The retest reliability (n = 28) was 0.93, 0.93, 0.94, and 0.82 respectively. For this sample, reliability was 0.90, 0.91, 0.70, and 0.79 respectively.

Data Analysis

Data from the prenatal, two week postpartum, and six week postpartum questionnaires were coded and entered into the researcher's computer. Addressing missing data, performing necessary transformations, and examining the data for violations of assumptions for parametric testing were accomplished prior to analyses. Analysis of the data was completed using SPSS Graduate Pack 8.0 for Windows.

Descriptive statistics were used to analyze demographic data, breastfeeding intent, return to work/school, data on prenatal and postnatal breastfeeding information, delivery setting, pattern of feeding, and infant information. Delivery setting items were crosstabulated with delivery hospitals. Only those who continued to breastfeed through six weeks postpartum were included for analysis. However, information on reason(s) for breastfeeding cessation were descriptively reported for those participants who stopped

breastfeeding prior to six weeks postpartum.

The social support scale allowed for a minimum score of 24 (not supportive) and a maximum score of 60 (very supportive). Items answered as a one (not applicable) were entered as missing data. Mean scores for each respondent were used to calculate group means at the prenatal, two week, and six week postpartum periods. A composite score was created from the means for each data collection point.

The BFKQ, Form A and Form B, allows for a range in score from zero to 32. Individual raw scores were percentiled zero (no correct responses) to 100% (all correct responses). These individual scores were used to calculate group means. The breastfeeding coping confidence scale ranged from a minimum score of 10 (not very confident) to a maximum score of 50 (very confident). Individual mean scores were used to calculate the group mean.

The breastfeeding information scale ranged from a minimum score of 10 (very inadequate information) to a maximum score of 50 (very adequate information). For purposes of testing Research Question One, mean scores for each respondent were used to calculate the group mean. The breastfeeding affective support scale ranged from a minimum score of 12 (very low support) to a maximum score of 60 (very high support). Mean scores for each respondent were used to calculate group means for analysis of Research

Question Two.

The MBFES scores ranged from a minimum of 30 (very low success) to a maximum of 150 (very high success). Subscale items and transformation information were provided in the permission letter drafted by Ellen Leff (Appendix M). Individual means were used to calculate group means for the MBFES and its subscales. These group means were used for analysis of all the research questions.

Infant weights were descriptively reported, and converted to percent change from birth to two weeks, and two weeks to six weeks postpartum. Not all infants were weighed at exactly two and six weeks postpartum. Those infants who varied from the data collection points by greater than one week were not included. This avoided erroneous means in the data analysis. Means were then compared using an independent *t* test to evaluate differences of infant weight for gender and for pattern of feeding. Significance was set at 0.05.

Research Question One

To test Research Question One, is breastfeeding information given by inpatient nurses related to breastfeeding success, a Pearson product-moment correlation was used to determine if a relationship existed between the nursing information total mean score and the MBFES total mean score. Significance level was set at 0.05.

Research Question Two

To test Research Question Two, is affective support for breastfeeding given by inpatient nurses related to breastfeeding success, a Pearson product-moment correlation was performed. The total breastfeeding affective support score was correlated with the MBFES total mean score. Significance level was set at 0.05.

Research Question Three

Testing of Research Question Three, is there a difference in breastfeeding success between exclusive and mixed feeders, was tested using an independent *t* test. To perform this test, mothers were categorized as exclusive breastfeeders (breast milk in any form) or mixed feeders (formula and breast milk in any form). Significance level was set at 0.05.

Research Question Four

Testing of Research Question Four, what maternal factors predict breastfeeding success, was tested using a simultaneous multiple regression analysis on 17 maternal characteristics, and the information and support total mean scores, with total mean MBFES scores. Selection of the variables was based on review of the literature and placed within the context of the theoretical framework. The significance level was set at 0.05.

Limitations

The study design and sample selection limit

generalizability of the findings. By seeking volunteers, this precluded random selection. Limitations of sample selection may be mitigated by a larger sample size than originally calculated as needed for power of .80, moderate effect (R^2 = .13), and an α at .05.

Exclusion criteria of the sample may alter findings on breastfeeding success. Using mothers who deliver a term, singleton infant without complications did not allow for incorporation of breastfeeding success outcomes that may be different in a group of low or very low birth weight infants, or infants with complications such as cleft lip or palate.

Other limitations of sample selection were utilizing only participants who were fluent in English. This did not allow the researcher to adequately address cultural influences on breastfeeding. Also, age limitation (greater than 18 years of age) did not fully capture the adolescent population. Selection of mothers who were attending childbirth classes precluded those mothers who either did not have access to childbirth classes or who did not desire to attend childbirth classes. Inherent in the selection method was that without randomization, representativeness of the population was not entirely achieved.

The data collection process may also limit the study findings. Response rates to survey mailings can be poor, indicating a need for an initially large sample size to

counteract the potential loss of participants. In this study, the only method of data collection was through participant survey.

Potential limitations to this method of collection were accuracy of recall and participant understanding of items on the questionnaire. Even though one of the criteria for sample selection was the ability to read and write in English, this did not account for variances in level of understanding for the written word. There might have been cultural and literacy differences which could account for misinterpretation of items on the questionnaire.

One final limitation was related to scale reliability and validity. A pilot test was not conducted on the social support scale to determine initial reliability. However, content validity was established and reliability in the sample was 0.68.

There was no reported validity for the breastfeeding confidence scale measuring affective response to breastfeeding. Content validity may have been conducted on the breastfeeding confidence scale, but may not have been reported in the study in which the scale was introduced.

The reliability for both the BFKQ, Form A and B, for this sample were lower than the reported reliability coefficients, at 0.59 and 0.41 respectively. Reliability scores below .70 may be problematic and will be addressed in the findings section of this thesis.

CHAPTER 4

FINDINGS

The purpose of this chapter was to report the findings on data collected from 230 women who continued to breastfeed through six weeks postpartum. The data analysis included a description of the sample and provided answers to the research questions: (1) What is the relationship between maternal perceptions of breastfeeding information given by inpatient nurses and breastfeeding success at six weeks postpartum?;(2) What is the relationship between maternal perceptions of affective support given by inpatient nurses and breastfeeding success at six weeks postpartum?; (3) Is there a difference in breastfeeding success between exclusive and mixed feeders?; and (4) What are the factors that predict breastfeeding success at six weeks postpartum?

Background Variables of the Sample

Demographic Characteristics

Table 2 provides the frequency and percentage of the demographic characteristics for the sample population. A total of 420 women were initially recruited. By six weeks postpartum, 89 women had discontinued breastfeeding, 22 women were excluded due to eligibility requirements, and 73 women either desired to be withdrawn from the study or were unable to be contacted by the researcher. Six mothers

Table 2

Demographic Characteristics of Sample

Characteristic	N	Frequency	Percent
Age	228		
18-22		30	13.2
23-27		77	33.8
28-32		77	33.8
33-37		37	16.2
38-42		7	3.0
Race/Ethnicity	229		
Caucasian		185	80.8
Hispanic		22	9.6
Asian		12	5.2
Black		7	3.1
Other		3	1.3
Marital Status	229		
Married		185	80.8
Living w/partner		20	8.7
Single/Divorced		24	10.5
Educational Level	230		
Less than High School		2	0.9
High school		20	8.7
Associate/Jr. College		93	40.4
Bachelors		66	28.7
Masters/Post bachelors		46	20
Post Masters/Above		3	1.3
Income	221		
<$30,000		31	14.0
$30,000 to $59,999		73	33.0
$60,000 to $90,000		62	28.0
>$90,000		55	25.0

delivered at hospitals different from their recruitment sites and were not sufficient enough in number for statistical analysis. Accounting for these exclusions, the study sample totaled 230 women.

Age range was 18 to 42 with a median age of 28 and a standard deviation of 5.3 years. The majority of mothers were Caucasian (80.8%) and married (80.8%). Only one mother reported being divorced in the Single/Divorced category.

Median level of education was at the Associate degree level or having some college. Annual household income ranged from less than $10,000 to greater than $90,000, with the median income category of $60,000 to $69,000.

Social Influences

Overall, mothers rated their social supports for breastfeeding as moderate to high (on a two to five scale), with a range of three to five for the prenatal, two week, and six week postpartum periods. Mean scores for the prenatal, two week, and six week postpartum periods were 4.73, SD = .40; 4.72, SD = .38; and 4.70, SD = .40 respectively. A breakdown of the various social supports and their frequencies are found in Table 3.

Overall, the father of the baby, mother's mother and mother's sister remained consistent in both number and perceived level of support. The greatest increase in

numbers were for the pediatricians and lactation consultants, with both showing a slight perceived decrease in support offered to the breastfeeding mother. The number

Table 3

Perceived Social Supports for Breastfeeding

	Mean Score		
Social Support	Prenatal (N)	2 Week (N)	6 Week (N)
Father of the baby	4.88 (221)	4.87 (224)	4.87 (224)
Mother's family			
Mother	4.81 (212)	4.81 (208)	4.79 (212)
Sister	4.71 (135)	4.76 (123)	4.75 (142)
Grandmother	4.72 (120)	4.78 (108)	4.74 (115)
Father's family			
Mother	4.62 (178)	4.57 (172)	4.49 (182)
Sister	4.58 (126)	4.61 (111)	4.59 (116)
Grandmother	4.62 (79)	4.48 (56)	4.45 (76)
Friend(s)	4.54 (206)	4.64 (210)	4.66 (212)
Health care providers			
Obstetrician	4.85 (193)	4.81 (206)	4.76 (212)
Pediatrician	4.85 (109)	4.76 (221)	4.79 (222)
Nurse[1]	4.81 (115)	4.63 (65)	4.64 (163)
Lactation consultant	4.93 (59)	4.87 (126)	4.89 (120)

Note. 1. Excludes inpatient nurses.

of friends remained stable, however, the perceived level of support increased over time. The father of the baby's

mother and grandmother, obstetrician, and nurses (other than inpatient nurses) were perceived as being less supportive over time. Two participants did not respond to any of the social support items.

Eight mothers reported other supports in addition to those identified on the scale. One mother used message boards on the Internet. The mother's father (n = 1), father of the baby (n = 2), maternal aunts and uncles (n = 1), a mother's employer (n = 1), and employees at a breast pump supply store (n = 1) were also cited.

Over half of the mothers planned to return to work (64.3%). Twenty-four mothers were undecided prenatally. 53.3% (n = 122) mothers indicated plans to return to work by three months postpartum. Twenty-one mothers indicated plans to return by six months, and seven mothers by one year. 31.7% (n = 73) indicated no plans to return to work.

Health Care Experience

Parity/Breastfeeding Experience

One hundred eight-six mothers (80.9%) were first time mothers with no breastfeeding experience. Forty-four mothers (19.1%) were multiparous. Of these mothers, five stated they had no breastfeeding experience, five attempted breastfeeding unsuccessfully with their previous children, and 34 breastfed successfully.

70.4% (n = 162) of mothers delivered vaginally. Of

these, 18.7% (n = 43) required either vacuum or forceps assistance. Sixty-eight mothers delivered by cesarean section, of which six mothers reported it was a planned cesarean delivery.

97.4% (n = 224) of mothers reported they were able to breastfeed their infants following delivery. Time to initiate breastfeeding ranged from almost immediately to 48 hours postpartum, with a mean time of 3.46 hours. The mean time for all vaginal deliveries was 2.82 hours (n = 154) compared to 5.07 hours (n = 61) for cesarean deliveries.

Delivery Setting

50.4% (n = 116) of mothers were discharged from the hospital after two days postpartum. 21.3% were discharged after one day postpartum, and 23.9% were discharged three days after delivery. There were nine mothers who were discharged after four days, and one mother after the ninth day postpartum. Table 4 identifies the frequency and percent of mothers delivering at each facility. No differences were statistically significant between hospitals for age, race, education level, income, marital status, level of social supports, and breastfeeding experience. Table 5 lists a description of the various hospital breastfeeding practices.

Rooming-In

The mean number of hours the infant roomed in with

their mother was 23.1 hours, with a range of six to 24 hours. Nine mothers did not provide the number of hours they roomed in with their infant. Rooming-in was offered to all mothers.

Table 4

Number of Deliveries by Hospital

Hospital	Frequency	Percent
A	23	10.0
B	38	16.5
C	22	9.6
D	31	13.5
E	18	7.8
F	31	13.5
G	38	16.5
H	29	12.6
TOTAL	230	100.0

Formula Supplementation

Of the 36.1% (n = 83) of mothers whose infants did receive formula supplementation, 82 mothers reported a range of approximately 1/4 to 17 total ounces per day. The median amount of formula supplementation per day was two ounces, with a standard deviation of 3.7. Hospital G

(private) was found to have the least amount of formula supplementation. The remaining seven hospitals' supplementation rates ranged from 26.1% to 52.6%.

Table 5

Difference in Hospital Practices

Practice	Yes	No	*df*	X^2	*p*
Rooming-in[1]	224	6	7	3.83	.799
Formula supplementation[1]	83	147	7	23.79	.001
Pacifier use[1]	97	133	7	30.73	.000
Giftpack at discharge[2]	188	39	7	28.13	.000
Community resource list[1]	168	62	7	30.80	.000

Note. 1. N = 230; 2. N = 227.

Pacifier Use

The mean pacifier use was 2.8 times per day, ranging from one to 12 times. Nine mothers did not include information on frequency of pacifier use. Hospitals E, F, and G had the least amount of pacifier use at 33%, 19.4%, and 21.0% respectively. The five other hospitals ranged from 38% to 71%.

Formula Gift Packs

The majority of mothers received formula gift packs at time of hospital discharge. There were no differences between the hospitals in providing gift packs to the mothers. Three mothers did not respond to this item.

Community Breastfeeding Resource List

Twenty-seven percent of mothers were not provided a listing of community resources at time of discharge. Of the 62 mothers who were not provided community resources, delivery at three of the private hospitals (B, D, and G) accounted for the largest percentages at 28.9%, 54.8%, and 42.1% respectively.

Perceptions of Community Breastfeeding Resources

Of the mothers who received breastfeeding resources (n = 168), 165 responded to this item. At two weeks postpartum, 35 did not need to use the resources given, seven stated they were not helpful, 47 felt they were somewhat helpful, 35 felt they were usually helpful, and 41 felt they were very helpful.

Comparatively, 25 did not need to use any resources at six weeks postpartum. Six mothers stated they were not helpful, 37 felt they were somewhat helpful, 52 reported they were usually helpful, and 28 found them to be very

helpful. Twenty mothers did not respond to this item at six weeks postpartum.

Intrinsic Motivation (Intentionality)

One of the criteria for inclusion in the study was the intent to breastfeed. Therefore, this concept was an inherent part of the study. However, the degree to

Table 6

Predicted Duration of Breastfeeding

Duration	Frequency	Percent
Birth - 1 month	1	0.4
1 - 2 months	6	2.6
3 - 4 months	10	4.4
5 - 6 months	41	17.9
7 - 8 months	5	2.2
9 - 10 months	11	4.8
11 - 12 months	51	22.2
> 12 months	12	5.2
Months, not quantified	11	4.8
Undecided	82	35.7

Note. N = 230.

which they felt they would fulfill this intent varied. The scale item ranged from one (very unsure) to five (very

sure). Three responded very unsure and 112 (48.7%) responded very sure. Two participants provided no response. Thirty-seven percent (n = 85) felt somewhat sure, and 28 participants were either neutral (n = 14) or somewhat unsure (n = 14).

The frequency and percent of predicted duration to breastfeed is displayed in Table 6. Eighty-two (35.7%) mothers did not know or were undecided about the length of time they planned to breastfeed. Eleven mothers indicated they planned to breastfeed, but did not quantify the number of months planned.

Mothers were asked if they planned to supplement with formula. Twenty-four (10.4%) stated they did plan to supplement. One hundred five (45.7%) mothers did not plan to use formula to supplement feedings. Ninety-nine mothers were undecided. Two mothers did not respond to this item. Mothers who were planning to supplement (n = 24) were also asked to indicate the amount of formula supplementation they planned to use. Nineteen mothers did not know how much formula they planned to supplement. Of the five mothers' who responded yes, they indicated as needed (n = 1), two ounces or less per day (n = 2), and five ounces or less per day (n = 1). Two mothers planned to supplement at three to four months postpartum.

Cognitive Appraisal

Prenatal/Postnatal Breastfeeding Knowledge

Form A of the Breastfeeding Knowledge Questionnaire (BFKQ) was used to assess breastfeeding knowledge prenatally, and Form B assessed knowledge postnatally. Results of the questionnaire can be found in Table 7. Raw scores were converted into a percentage, with a possible range from zero (no items correct) to 100% (all items correct). A 6.2% increase in breastfeeding knowledge was noted between the pre and postnatal scores.

Table 7

Prenatal/Postnatal Breastfeeding Knowledge Scores

BFQK	Mean score	Range	SD
Prenatal	80.24%	34.38-96.88%	10.09
Postnatal	87.50%	56.25-96.88%	7.15

Note. N = 230.

Knowledge scores were lower (M = 79.17) for mothers with less breastfeeding experience (n = 191) than mothers with experience (M = 85.50) (n = 39), $t(228) = -3.664$, $p = .000$. However, at two weeks postpartum, there was no difference between the postnatal mean knowledge scores for mothers with (M = 85.33) and without (M = 85.28) breastfeeding experience.

Prenatal/Postnatal Breastfeeding Information

Sources of prenatal breastfeeding information and the time spent using each source is displayed in Table 8. The frequencies listed are for those mothers who obtained information from the various sources.

Table 8

Prenatal Sources of Breastfeeding Information

Source	Frequency	Percent	Minutes (n)
Childbirth class	130	56.5	30 (119)
Breastfeeding class	101	43.9	120 (99)
Self-study	196	85.2	60 (171)
Obstetrician/Pediatrician	53	23.0	30 (51)

Table 9 outlines the various sources of breastfeeding information mothers received for breastfeeding after they were discharged from the hospital. The majority of mothers who responded to this item received information either from a lactation consultant or from self-study.

Affective Response

The breastfeeding coping confidence scale items ranged from one to five, with one being the least confident, and five being very confident. The mean score was 3.96 (N = 228). The median score was 4.10, with a standard deviation

of 0.76. Primiparas (n = 184) scored lower than multiparas (n = 44), with a mean score of 3.81 and 4.14 respectively. This difference approached statistical significance at $t(226) = -1.917$, $p = .056$.

Table 9

Postnatal Sources of Breastfeeding Information Following Hospital Discharge

Category	Frequency (n = 76)
Lactation consultant	27
Books, magazines	16
Breast pump retail store	7
Support group	5
Pediatrician	4
Friends	2
Family members	2
Nurse	1
Insurance company handouts	1
Formula company mailings	1
Video	1
No response	9

Overall, mothers (N = 228) felt somewhat confident they would continue to breastfeed despite certain breastfeeding

problems. Mothers felt most certain they would continue to breastfeed if they were to have a cesarean section, if their infant appeared hungry all the time, or if others pressured them to supplement with formula. They felt least confident if asked to breastfeed in a public place, or if their infant became sick.

Inpatient Breastfeeding Information

Teaching Methods

The most frequent method of teaching was one-to-one instruction. One hundred sixty-seven mothers reported having been offered this type of instruction, of which 140 mothers used this instruction. One hundred twenty-five mothers were offered written material on breastfeeding. All 125 used this type of instruction. 83.9% (n = 193) reported the significant other was not included during breastfeeding instruction.

Less commonly reported were inpatient breastfeeding classes offered (n = 38) and breastfeeding videos (n = 35). Eighteen and 17 mothers respectively used these teaching methods.

Additional Inpatient Breastfeeding Assistance

Eighty-two (35.7%) mothers reported they received additional breastfeeding assistance from others. Of these mothers, 55 reported they received their assistance from a lactation consultant. Eleven mothers cited either their

mother or mother-in-law, while four received advice from friends. Two mothers cited their pediatrician and another two mothers cited the father of the baby as giving assistance. One mother stated she received assistance from a medical technician, one from the newborn channel provided by the hospital, and one mother received assistance from a breastfeeding hot-line. Of the 82 mothers who stated they received additional assistance, five mothers gave no response to this item.

Breastfeeding Information Provided by Inpatient Nurses

The information scale used to measure the information provided by inpatient nurses ranged in score from 10 to 50, with a mean range of 1 to 5. One reflected the need for more information, while five represented that the respondent received adequate information. The mean score on the information scale for the sample (N = 230) was 3.16, median score of 3.25, mode of 3.40, with a standard deviation of 0.89. The mean of each item ranged from 2.56 to 3.69. When individual item scores were categorized into low, moderate, and high level of perceived information, 50% of mothers perceived a moderate level of information. 44.3% perceived a high level of information provided by inpatient nurses, and 13 mothers (5.7%) perceived a low level of information.

49.5% felt the information they received was adequate

Table 10

Maternal Responses to Breastfeeding Topics

Topic	Frequency	Percent
Positioning		
Adequate	189	82.2
Inadequate	34	14.8
Undecided	7	3.0
Sore nipples		
Adequate	151	65.7
Inadequate	77	33.4
Undecided	2	0.9
Engorgement		
Adequate	102	44.3
Inadequate	120	52.2
Undecided	8	3.5
Pumping		
Adequate	52	22.6
Inadequate	175	76.1
Undecided	3	1.3
Nutrition		
Adequate	77	33.5
Inadequate	149	64.8
Undecided	4	1.7
Let-down reflex		
Adequate	47	20.4
Inadequate	175	76.1
Undecided	8	3.5
Introduce solids		
Adequate	30	13.0
Inadequate	197	85.7
Undecided	3	1.3
Nursing frequency		
Adequate	169	73.5
Inadequate	59	25.7
Undecided	2	0.8

Note: N = 230.

was adequate for their overall breastfeeding needs. 32.1% felt they did not receive adequate overall breastfeeding information, and 15.2% were neutral. Table 10 details responses to individual information items. Mothers responded either adequate, neutral, or inadequate for each breastfeeding topic.

Mothers felt they received adequate information on positioning, care of painful or sore nipples, and nursing frequency. Just over half of mothers felt they did not receive enough information to manage engorgement. A large portion of mothers felt they needed more information on pumping or expressing milk, nutrition for breastfeeding, how to stimulate the let-down reflex, and when to initiate solid foods.

Additional Information Comments

Eleven mothers provided additional comments regarding breastfeeding information they received during their hospitalization. Four mothers stated they received the majority of the information they needed from prenatal breastfeeding classes. Two mothers stated they received the majority of the information they needed from reading books prenatally. Two mothers indicated they had previously breastfed and required information only on an as needed basis. One mother responded that she only received information from a discharge formula pack, one mother

stated less than two minutes was spent on teaching, and five mothers stated they had to request the information.

Breastfeeding Affective Support

Breastfeeding Affective Support Given by Inpatient Nurses

A potential score on the affective breastfeeding support scale ranged from 10 to 60, with a mean range from one to five. One represented the perception of no support, whereas five indicated a strong perception of support provided by inpatient nurses. Mean score on the breastfeeding affective support scale for this sample was 4.20 (N = 230), median score of 4.42, mode of 5.00, with a standard deviation of 0.84. The mean of each item ranged from 3.90 to 4.58.

When individual item scores were categorized into low, moderate, and high level of perceived affective support, 81.7% (n = 188) of mothers perceived a high level of affective support. 17.0% (n = 39) perceived a moderate level of affective support provided by inpatient nurses, and only three mothers (1.3%) perceived a low level of support.

Additional Affective Support Comments

Twelve mothers provided additional comments related to the affective support they received from inpatient nurses. Two mothers indicated they asked for help and felt the nurses were very helpful. One mother stated she received

support from only one of the nurses during the course of her hospital stay. One mother indicated the nurses were too pushy, and one mother stated the nurse strongly encouraged her to supplement for the baby's best interest.

Duration of Breastfeeding

Based on inclusion criteria for the study, all mothers who continued participation in the study were breastfeeding (N = 230) at six weeks postpartum. Table 11 illustrates the breastfeeding status for each week postpartum of the

Table 11

Breastfeeding Status from Birth to Six Weeks Postpartum

Weeks	Yes	No	Dropped	Ineligible	Total
1		31		22	
2		26	70	0	
3		12			
4		9			
5		6			
6	230	5	3	6	
Total	230	89	73	28	420

original 420 participants. As breastfeeding information was not collected on mothers who either were ineligible (n = 28) or wished to discontinue participation

in the study (n = 73), their status is listed as either dropped or ineligible.

Breastfeeding Cessation

Table 12 outlines reasons given for breastfeeding

Table 12

Reasons for Breastfeeding Cessation

Reason	Frequency	
	2 week (n = 57)	6 week (n = 32)
Difficulty latching, flat nipples	8	4
Insufficient milk supply	7	10
Maternal illness	5	2
Child temperament	3	1
Maternal medications	1	2
Sore, cracked nipples	2	0
Breast milk allergy	2	1
Cesarean section	1	0
Jaundice, infant not gaining weight	1	1
Fatigue, depression	2	1
Did not fit in my lifestyle	1	2
Nurse gave formula in hospital	1	0
Return to work	0	2
No response	23	6

cessation. Mothers were asked to respond to an open-ended item examining the reason for breastfeeding cessation at two and six weeks postpartum. These responses were only from mothers who were no longer participating in the study, but had either returned surveys or had provided information through telephone follow-up. Responses from those who were ineligible or did not wish to continue participation in the study were not obtained.

Pattern of Infant Feeding

Feeding Modality

Mothers' feeding modality varied between breast only, pumping, formula supplementation, or a combination of each. Table 13 looks at the types of modalities, their frequencies, and distributions at two and six weeks postpartum. The rate at which mothers exclusively fed breast milk in any form decreased by 16.1% between the two and six weeks postpartum periods.

Feeding Frequency/Length of Feeding

The mean frequency of feeding was every 2.48 hours in the first two weeks postpartum, with a mode of every two hours. 68.7% (N = 230) of mothers reported the length of total feed or pump time to be greater than 15 minutes.

The mode for feeding frequency was every three hours, with a mean of every 2.77 hours at six weeks postpartum. 66.5% of mothers reported greater than 15 minutes total

length of time to feed or pump at the six week data collection point.

Table 13

Feeding Modality at 2 and 6 Weeks Postpartum

Modality	2 Week	%	6 Week	%
Exclusive				
Breast	139	60.4	66	28.7
Breast/Pump	44	19.1	87	37.8
Pump only	8	3.5	7	3.1
Exclusive total	191	83.0	160	69.6
Mixed				
Breast/Formula	29	12.6	39	17.0
Pump/Formula	3	1.3	0	0.0
Breast/Pump/Formula	7	3.1	31	13.5
Mixed total	39	17.0	70	30.4

Note. N = 230

Formula Supplementation

The amount of formula supplementation at two weeks postpartum ranged from less than one ounce to 12 ounces per day. The median amount of supplementation was 2.5 ounces of formula per day. At six weeks postpartum, the median amount of supplementation was 4.0 ounces of formula per day, with a range of less than one ounce to 16 ounces.

Table 14

Additional Reasons for Formula Supplementation

Reason	Frequency 2 weeks
Increase infant's weight	3
Sore nipples	2
To feed when separated from infant	2
To feed in public	1
Infant sleeps longer through night	1

	Frequency 6 weeks
Convenience	3
To feed when separated from infant	2
Maternal fatigue, give mom a break	2
Sore, cracked nipples	2
Infant sleeps longer through night	1
Developed thrush	1
Supplemented while on antibiotics	1
Baby did not like what I ate	1
No pumped milk available	1
To freeze some breast milk ahead	1

Note. 2 week, n = 9; 6 week, n = 15.

The most frequently cited reason was that the infant seemed hungry after feeding or the mother thought that she had an insufficient milk supply (n = 25 at 2 weeks; n = 37

Table 15

Reasons for Pumping Breast Milk

Reason	Frequency 2 week (n = 62)	6 week (n = 125)
So others can help	19	26
To feed when separated from infant	11	29
Preparing to return to work	8	43
Difficulty latching	6	10
Sore, cracked nipples	5	1
Occasional convenience	5	5
To maintain or increase milk supply	3	1
To not breastfeed in public	2	5
To decrease feeding time	0	2
Thrush	0	1
To feed infant while in carseat	0	1
No reason provided	3	1

at 6 weeks). The second most frequent reason given was so the father of the infant could provide assistance (n = 11 at 2 weeks; n = 18 at six weeks). Ten mothers indicated

advice from the provider prompted them to supplement at two weeks postpartum, and seven mothers at six weeks postpartum. Four mothers reported return to work as a reason at two weeks postpartum, increasing to 17 mothers by six weeks postpartum.

Mothers were asked if there were any additional reasons for formula supplementation at two week and six weeks postpartum. Mothers provided a variety of additional reasons for supplementing with formula at both the two week and six week data collection points. Responses to the open-ended item are found in Table 14.

Of the 105 mothers who predicted they would exclusively breastfeed, 94 were feeding exclusively at six weeks postpartum. Of the 99 mothers who were undecided, 80 were exclusively breastfeeding, and of the 24 who planned to supplement, 14 were exclusively breastfeeding by six weeks.

Pumping Breast Milk

Reasons for pumping are outlined in Table 15. It was notable that 27.0% (n = 62) of mothers pumped at two weeks postpartum, and by six weeks postpartum, over half of mothers (n = 125) pumped breast milk.

Solid Food Supplementation

At two weeks postpartum, only one mother reported supplementing with cereal twice a day. At six weeks postpartum, seven mothers were supplementing with solid

foods. Six supplemented with cereal once a day, one mother supplemented with fruit one time per day, and one mother added cereal to the feeding five times per day.

Infant Information

Infants included in the study were born between April

Table 16

Percent of Change in Infant Weights

	Frequency		
% of change	Birth - 2 Wks	2 Wks - 6/8 Wks	Birth - 6/8 Wks
-19.99 to -10	4		
-9.99 to 0	45		1
.001 to 9.99	83	9	2
10 to 19.99	60	24	16
20 to 29.99	7	40	26
30 to 39.99	4	50	37
40 to 49.99		39	35
50 to 59.99		21	40
60 to 69.99		11	27
70 to 79.99		9	12
80 to 89.99			2
90 to 99.99			3
100 to 109.99			2

Note. N = 203.

and October 2001. Exactly half of the infants were girls and half were boys. The infants ranged in birth weight from four pounds, 15 ounces (1087 gm) to 10 pounds, 12 ounces (2365 gm), with a mean birth weight of seven pounds, 10.7 ounces (1687 gm), and a standard deviation of one pound,.23 ounces (2.23 gm).

Due to variations in data collection points for infant weight, not all infant weights were included for analysis. Weights were included if they did not vary greater than one week before or after the two week and six/eight week postpartum periods. Percent of change in weights were calculated on 203 infant weights ranging from birth to two weeks, and from two to six/eight weeks. The findings are listed in Table 16.

The mean percent of change from birth to two weeks was 6.70%, with a range from -14.92% to 37.89%. From two through six/eight weeks, the mean percent of change was 36.47%, ranging from 1.61% to 79.54%. Overall, the mean percent of change from birth through six/eight weeks was 45.63%, with a range of 0% to 106.23%.

There were 49 infants at two weeks postpartum who ranged in weight loss from 0 to 19.9%. Of these infants, 12 were supplemented for perceptions of insufficient milk supply. Two were supplemented at the advise of their pediatrician. One infant was supplemented so the

significant other could assist with feeding. One infant was supplemented at the advise of the pediatrician as well as for perception of insufficient milk. At six/eight weeks postpartum, there were nine infants who fell below a 10% weight increase. Of these infants, one was supplemented for perception of insufficient milk, one to prepare for return to work, one so the significant other could assist with feeding, and one for both perception of insufficient milk and so the significant other could assist with feeding.

Using the independent *t* test, the means were not found to be statistically significant for gender at birth to two weeks, for gender at two to six/eight weeks, or for gender on overall weight, from birth to six/eight weeks.

The mean percent of infant weight increase was greater for exclusively breastfed infants ($M = 7.96$, $SD = 8.49$) than for infants who were mixed fed ($M = 3.89$, $SD = 9.01$) in the first two weeks of life, $t(201) = 3.097$, $p = .002$. However, at the two week to six/eight week, and the birth to six/eight week time periods, there was no difference found between infant weight and exclusive or mixed fed infants.

Success With Breastfeeding

Success of breastfeeding was measured with the Maternal Breastfeeding Evaluation Scale (MBFES). Possible scores

ranged from 30 to 150, with a mean range of one to five. One represents low perceived satisfaction, whereas five

Table 17

Maternal Perceptions for the MBFES Subscales

MBFES Subscale	Range	Mean	SD	Frequency	Percent
MERA	2.07-5.00	4.32	.55		
High				207	90.0
Moderate				22	9.6
Low				1	0.4
ISG	2.38-5.00	4.32	.56		
High				202	87.8
Moderate				28	12.2
Low				0	0.0
LMBI	1.50-5.00	3.61	.75		
High				111	48.3
Moderate				111	48.3
Low				8	3.4

Note. N = 230; MERA = Maternal Enjoyment/Role Attainment Subscale; ISG = Infant Satisfaction and Growth Subscale; LMBI = Lifestyle and Maternal Body Image.

indicates a high level of satisfaction with breastfeeding.

Mean score on the MBFES for this sample was 4.13 (N = 230), median score of 4.20, mode of 4.27, with a standard deviation of 0.50. The mean of each item ranged from 2.17 to 4.97. When individual item scores were categorized into low, moderate, and high level of satisfaction with breastfeeding, 93.5% (n = 215) of mothers perceived a high

level of satisfaction. 6.5% (n = 15) perceived a moderate level of satisfaction, and no mothers indicated a low level of breastfeeding satisfaction.

The MBFES has three subscales measuring maternal enjoyment/role attainment (MERA), infant satisfaction and growth (ISG), and lifestyle and maternal body image (LMBI). Descriptive information on each of the subscales is found in Table 17.

Research Question One

Research question one, what is the relationship between breastfeeding information given by inpatient nurses and breastfeeding success at six weeks postpartum, was tested using the bivariate Pearson product-moment correlation, with a significance level set at $p < .05$. This technique determines the relationship between two variables and the strength of that relationship (Hazard-Munro, 2001). Violations to the assumptions for this procedure were investigated and the data was found to be normal in distribution and equal in variance between the independent and dependent variable (Burns, & Grove, 1997).

An r of .242 with a $p < .001$ indicated a small, yet statistically significant positive correlation between information given by inpatient nurses and breastfeeding success at six weeks postpartum. As the maternal perceptions of information received from inpatient nurses

increased, perceptions of their breastfeeding success also increased. This finding explained 5.9% of the variance (r^2 = .059) between information given by inpatient nurses and breastfeeding success.

Research Question Two

Research question two, what is the relationship between breastfeeding support given by inpatient nurses and breastfeeding success at six weeks postpartum, was tested using the bivariate Pearson product-moment correlation, with a significance level set at $p < .05$.

Violations to the assumptions for this procedure were investigated and the data was found to not have normal distribution and equal variance between the independent and dependent variable. However, Polit (1996) states that violations of normal distribution and equal variance may have a small effect on the statistical validity of the test, especially when sample sizes are greater than 25 to 30. Therefore, the decision to use the bivariate Pearson product-moment correlation was maintained.

Although small, the positive correlation was statistically significant between affective support given by inpatient nurses and breastfeeding success at six weeks postpartum for the sample (N = 230, r = .217, p = .000). As mothers' perceptions of the support they received from inpatient nurses increased, their perceptions of

breastfeeding success increased. The r^2 explained 4.7% of the variance between support given by inpatient nurses and breastfeeding success.

Research Question Three

Research question three, is there a difference in breastfeeding success between exclusive and mixed feeders, was tested using an independent *t* test, with the significance level set at $p < .05$. The independent *t* test was used to measure differences between two group means. It was an appropriate measure to examine the differences between nominal level groups and when the dependent variable approximates interval level data (Polit, 1996).

The two groups were defined based on whether they supplemented infant feedings with formula once they were discharged from the hospital. Those who did not supplement with formula were considered exclusive breastfeeders (n = 158). Those who supplemented with formula were considered mixed feeders (n = 72) for the purpose of this analysis.

Violations for the assumptions of the *t* test were looked at. Both groups demonstrated normal distribution. Levene's test for equality of variance between the two groups was not found to be statistically significant, $F(228) = .218$, $p = .510$.

Mean scores for exclusive and mixed feeders were 4.16 and 4.07 respectively. No statistical difference between

the mean scores was found, $t(228) = 1.169$, $p = .24$. Perceptions of breastfeeding success were not different between exclusive and mixed feeders.

Research Question Four

Simultaneous multiple regression analysis was used to answer research question four, what are the maternal factors that predict breastfeeding success at six weeks postpartum? This method of testing was selected because it would allow the researcher to explore interrelationships among variables in the model and make predictions from them. With only one dependent variable under examination, multiple regression analysis was an appropriate choice (Hazard-Munro, 2001). Significance was set at .05. Due to the number of predictor variables in the model, the adjusted R^2 was reported.

Predictor variables were selected for inclusion based on review of the literature and within the context of the theoretical framework. Because no order of entry for the variables into the model could be assumed within the theoretical framework, simultaneous entry was performed as a single block. Data losses during the analysis resulted in a N = 194.

Those predictor variables that were nominal but not dichotomous in nature were dummy coded. Race/ethnicity was coded as 0 for non-Caucasian and 1 for Caucasian. Marital

status was coded 0 for unmarried and 1 for married. Parity/breastfeeding experience was coded 0 for no breastfeeding experience and 1 for breastfeeding experience. To assess if mothers were able to breastfeed within two hours following delivery, this continuous variable was recoded as 0 for greater than two hours and 1 for less than two hours.

Original dichotomous variables were coded as follows: return to work, 0 = yes, 1 = no; delivery type, 0 = cesarean, 1 = vaginal; pacifier use, 0 = yes, 1 = no; formula use, 0 = yes, 1 = no; gift pack, 0 = yes, 1 = no; and referral, 0 = no, 1 = yes. All other variables were interval and required no recoding.

Prior to performing the multiple regression analysis, assumptions of the data were evaluated for each of the variables of interest. Multicollinearity was assessed using a correlational matrix on the 19 independent variables. The *r* ranged from .002 to .402. Tolerances ranged from .646 to .885, and VIF ranged from 1.13 to 1.15.

The dependent variable was of normal distribution. Scatter plots for each independent variable on the dependent variable revealed no curvilinear association. Plots for normal probability (observed versus expected probabilities), studentized deleted residual versus standardized predicted values, and histograms of residual

Table 18

Simultaneous Multiple Regression Analysis of Predictor Variables for Breastfeeding Success

	Breastfeeding Success		
Predictor Variable	r	β	*p*
Age	-.05	.01	.90
Race	-.05	-.06	.37
Education	-.04	.02	.81
Income	-.03	.03	.66
Marital status	-.13	-.14	.05
Return to work	-.07	-.06	.37
Social Supports	.29	.18	.01*
Breastfeeding experience	.19	.14	.06
Delivery type	.09	-.00	.97
First feed by 2 hours	-.08	-.13	.07
Pacifier use	.11	.10	.14
Formula supplementation	.07	.09	.22
Gift pack at discharge	-.06	-.10	.12
Referrals at discharge	-.06	-.13	.06
Prenatal knowledge	.02	-.09	.21
Postpartum knowledge	.02	.06	.43
Breastfeeding coping confidence	.39	.39	.00*
Inpatient information	.21	.10	.21
Affective support	.22	.09	.24

Adj R^2 = .26

$F(19,174)$ = 4.51

Note. N = 194; * p < .05.

distributions were conducted (SPSS, 1998©). There were three outliers on the standardized residual which were removed from analysis.

The composite social support scale and nursing support scale revealed normal residual distributions, however, residual versus predicted values demonstrated unequal variability. This effect normalized when all variables were entered into the model.

Positive breastfeeding coping confidence and positive perceptions of social supports significantly contributed to the variance in breastfeeding success. The overall adjusted R^2 was .257, accounting for 25.7% of the variance. The model was significant at the .000 level. Table 18 details summarizes findings from this analysis.

Breastfeeding coping confidence and social supports were significant predictors of breastfeeding success. Both were positively correlated with breastfeeding success, meaning mothers with increased levels of confidence and social supports reported higher levels of breastfeeding success.

Four variables approached statistical significance at $p < .10$ level. They were marital status, breastfeeding experience, time to initiate breastfeeding, and referrals at discharge. Marital status, time to initiate breastfeeding, and referrals at discharge were negatively

correlated with breastfeeding success. This indicated mothers who were not married, who initiated their first feed after two hours from delivery, and who were not provided breastfeeding referrals at discharge had a higher level of breastfeeding success. Breastfeeding experience was positively correlated. This was interpreted as mothers with more breastfeeding experience had a greater level of breastfeeding success. All other variables entered in the model made negligible contributions in explaining the variance in breastfeeding success.

Further exploration of these findings was conducted using an independent *t* test. There were no differences in mean MBFES scores for race, plans to return to school or work, delivery type, formula gift pack, or prenatal knowledge scores. However, a significant difference was noted for marital status. The mean MBFES score of mothers who were not married (n = 43) was 4.26, while mothers who were married (n = 183) was 4.05. Variances were found to be equal, $F(224) = .183$, $p = .669$, and the value of t for equal variances assumed was used, $t(224) = 2.547$, $p = .012$.

CHAPTER 5

SUMMARY

The purpose of this chapter was to examine the findings of the research, and consider possible conclusions from the results. Implications for nursing and areas for further study have been addressed.

Discussion

The purpose of this study was to explore if a relationship existed between breastfeeding information and support inpatient nurses provide to breastfeeding success at six weeks postpartum. It also addressed if there was a difference in breastfeeding success between women who exclusively breastfed and those who supplemented their infant feedings at six weeks postpartum. Lastly, this study explored which maternal factors predicted breastfeeding success at six weeks postpartum.

Like mothers in previous studies, there was decreased variability with respect to race and marital status. The mothers in this sample were primarily Caucasian and married. They were affluent, with a median age of 28. Interestingly, marital status was found to be statistically different, in that unmarried mothers perceived their level of success higher than mothers who were married. Otherwise, mothers who were older and with greater affluence did not feel themselves less successful at

breastfeeding than mothers who were younger with less affluence. These results differ from other studies that report older age, being Caucasian, having a greater affluence, and being married as the determinants of breastfeeding success (Isabella & Isabella, 1994; Janke, 1993; Nolan & Goel, 1995; Piper & Parks, 1996; Quarles et al., 1994).

Employment has not been found to influence initiation of breastfeeding (Visness & Kennedy, 1997), yet it has been associated with shorter duration and a decreased level of breastfeeding (Fein & Roe, 1998). Although not a statistically significant finding, mothers from the current study who planned to return to work perceived a higher level of success than mothers who were not planning on returning to work. However, many women had not made their reentry back to school or work by six weeks postpartum. Actual return to school or work may have impacted the level of perceived success had the study examined women beyond the six weeks.

Findings of this study did indicate that there was a significant positive relationship between breastfeeding information and support given by inpatient nurses to breastfeeding success at six weeks postpartum. This supports previous studies that have shown inpatient advice and support to have a positive effect on increased duration

of breastfeeding (Bernaix, 2000; Izatt, 1997; Rajan, 1993; Humenick, Hill, et al., 1998). Although the significance was small, the sample size and level of significance was such that these results most likely did not occur due to sampling error.

The two methods of teaching by nurses that mothers experienced most were one-to-one instruction and reading handouts. Notably, not all mothers were offered one-to-one instruction. Only 167 mothers reported being offered one-to-one instruction, which was subsequently used by 140 mothers. One hundred twenty-five mothers were provided handouts. All mothers who were offered handouts used this type of information.

Most mothers rated the information received by inpatient nurses as high to moderately high. Yet only half of the mothers felt the information received was adequate for their breastfeeding needs. Mothers thought information received related to positioning, managing sore nipples, and the frequency of nursing was sufficient. Half of mothers desired additional information on engorgement, while approximately 65% to 86% of mothers desired information on pumping, maternal nutrition, let-down reflex, and when to introduce solids.

These findings were similar to results from a study conducted by Cornett (1989), where mothers felt they

received adequate information on sore nipples, engorgement, and frequency of nursing. Mothers in the current study felt they had received more information on positioning than mothers in Cornett's study. However, there was a greater number of mothers who perceived inadequate information on pumping, maternal nutrition, and let-down than those found in Cornett's study.

It may not be surprising that mothers desire additional information on engorgement and let-down. These mothers generally are discharged from the hospital before their milk comes in, and often are left to manage issues concerning engorgement and let-down on their own (Biancuzzo, 1997; Kearney et al., 1990; Mozingo et al., 2000).

Difficulties that arise when engorgement and let-down have not been well managed could be difficulty in latching on and establishing an adequate milk supply. In this study, 29 mothers had stopped breastfeeding by six weeks postpartum for these two reasons. Thirty-seven mothers were supplementing at six weeks because of perceived insufficient milk supply.

Mothers want to know if their infants are getting the right amount of nutrients. In terms of infant weight gain, there were only nine mothers whose infants gained weight more slowly than expected, of which two of these mothers

were supplementing with formula because they felt their baby was still hungry after breastfeeding. All the mothers in this study perceived a moderate to high level of satisfaction with their infant's growth, despite the actual infant weight that was gained.

However, mothers need to receive information on maintaining an adequate milk supply, as well as be provided the anticipatory guidance on normal infant growth and development. At both two and six to eight week postpartum, infants can experience growth spurts that the mother may perceive as an inadequate milk supply. Consequently, her supplementation may further decrease her milk supply. Hill, Humenick, Argubright, et al. (1997) also found similar results with regard to perceived insufficient milk supply and its relation to premature weaning.

That mothers desire additional information on nutrition could be the result of an increased awareness of the importance of nutrition, both in the antepartum and postpartum. Mothers also desired more information on pumping. By two weeks postpartum, 62 mothers were pumping. By six weeks postpartum, this number increased to 125, accounting for 54.4% of mothers in this study. Reasons for pumping varied, but several mothers reported they did so to help feed when separated from their infant, so others could help, and return to work.

Mothers were also split on responses to the Lifestyle and Maternal Body Image subscale. Half of the mothers felt highly successful, and half felt moderately successful. This could possibly be due to an incongruence between understanding the benefits of breastfeeding, yet experiencing more difficulty than anticipated in making necessary lifestyle adjustments to incorporate the breastfeeding behavior.

In the literature, information alone is not enough to impact breastfeeding success (Coombs, Reynolds, Joyner, & Blankson, 1998; Townsend, 1982; O'Campo et al., 1992). This study validates these previous findings. The majority of mothers (81.7%) rated the support they received during their hospital stay as high. Yet mothers rated the information they received as moderate to high. Additionally, 177 mothers rated their obstetrician or pediatrician high for support of breastfeeding in the prenatal period. Yet only 53 mothers responded they had received information from their obstetrician or pediatrician during this time. One hundred twenty three of 168 mothers responded that they were provided community referrals at discharge. However, only 76 mothers stated they received additional information during the two week postpartum period. This suggests that the act of support may be perceived as not only the information, but also the

technical and affective actions necessary to be perceived as supportive (Tarkka & Paunonen, 1996).

One of the predictors of breastfeeding success in this study was the role of social supports. When examined individually, each social support item was not predictive of breastfeeding success. It appears the cumulative effect of social support is more important than the separate action of its parts.

The new breastfeeding mother consistently utilized the father of the baby and her mother for breastfeeding support. These two social supports were also highly supportive of her breastfeeding efforts. The utilization of friends, as well as the perceived level of support from friends increased from the prenatal to six week postpartum periods. Even though these findings reveal new mothers were reliant on the father of the baby, her mother, and her friends, 83.9% of significant others were not included in breastfeeding instruction during the breastfeeding mother's hospital stay. This is consistent with the findings of previous studies (Lazzaro et al., 1995; Tarkka & Paunonen, 1996).

Although there was an increased use of health care professionals, a decrease in perceived level of support from all health care professionals was noted between the prenatal and six week postpartum periods. This decrease

may not be an accurate reflection of all mothers in the study. Less than half of the mothers utilized their pediatrician, nurses, and lactation consultants in the prenatal period.

However, it is possible the perceived level of breastfeeding support actually declined over time. The most notable perceived decline was seen in nurses outside of the inpatient setting. Support from clinical nurses, showed a significant decrease from the prenatal to the two week period. No further decline was noted from two to six weeks postpartum. A possible consideration for the decrease in perceived support from health care professionals could be related to advice and support that may have been perceived as inconsistent or limited between the three time periods. Inconsistent information has been documented in the literature (Cox & Turnbull, 1998; Mozingo et al., 2000; Rajan, 1993) as a source of breastfeeding dissatisfaction.

The pattern of infant feeding was not found to have an impact on breastfeeding success. Just under half of the mothers chose to exclusively breastfeed, of which 25 mothers supplemented by six weeks postpartum. Roughly the same amount of mothers were undecided about supplementing prior to delivery, of which 66 exclusively breastfed. Eleven of the 24 mothers who planned to supplement were

exclusively breastfeeding at six weeks.

Whether the mother supplemented due to perceived insufficient milk supply, for others to assist, return to school or work, or other less frequently cited reasons, this study found no statistically significant difference in perceived level of breastfeeding success for mothers who were exclusive or mixed feeders. This finding differs from previous studies that demonstrate early weaning practices when formula is introduced (Hill, Humenick, Brennan, & Wolley, 1997; Martin-Calama et al., 1997).

Certain hospital practices were not found to have an impact on breastfeeding success. There was no difference in breastfeeding success for infants who received formula, used pacifiers, received formula gift packs, or who did not room-in. It was also noted that mothers who did not initiate breastfeeding within two hours of delivery were also likely to have delivered by cesarean section. These mothers were no less successful than mothers who fed within two hours of delivery. However, Wright et al. (1996) examined the effect of pacifier use, formula supplementation, inability to room-in, and receiving gift packs on duration at one and five months postpartum and found they negatively influenced duration. Although the current study only examined breastfeeding patterns through six weeks postpartum, the difference in the findings

between the two studies was evidenced at the four to six week timeframe.

The second predictor for breastfeeding success in this study was breastfeeding confidence. This finding has been supported by previous studies (Dennis & Faux, 1999; Hill & Humenick, 1996; O'Campo et al., 1992). Increasing a mother's knowledge and providing positive support can enhance her self-reliance and trust in her own abilities to breastfeed (Tarkka et al., 1998).

Mothers with prior successful breastfeeding experience demonstrated a perceived level of success with their current breastfeeding. An obvious explanation could be these mothers possessed the knowledge and technical ability to perform the tasks of breastfeeding. Therefore, it is not surprising that the level of confidence between mothers with and without breastfeeding experience differed. However, both experienced and inexperienced mothers believed they were successful at breastfeeding.

This finding differs from a previous study conducted by Lawson and Tulloch (1995). They found that mothers with previous breastfeeding experience possessed the confidence needed to ensure breastfeeding success. The difference between this study's findings and Lawson and Tulloch's findings may be attributed to the level of breastfeeding knowledge between the two samples. The majority of mothers

in the current study read on their own (85.2%), and approximately one half received additional information from childbirth and breastfeeding classes. Another 23% received information from their provider. Even though mothers without breastfeeding experience possessed less knowledge on breastfeeding prenatally, they were equivalent with the knowledge scores of mothers who had breastfeeding experience by the postnatal period.

Mothers in this study were primarily Caucasian, affluent, married, and 18 years of age or older. As the demographics were not representative of the population as a whole, it is difficult to generalize the findings beyond the study sample. Further, since intent to breastfeed was a criteria for inclusion in the study, there was a natural selection bias. These mothers may have been more motivated to initiate and continue breastfeeding.

Further, these mothers were recruited from childbirth classes. It is unknown if the results would have differed if the sample had been selected from women who had not attended prenatal education classes. However, the literature supports that attending prenatal classes positively impacts breastfeeding outcomes (Handfield & Bell, 1995; Oxby, 1994).

Recall bias may have played a role in varying responses to survey items. Although the design was to request

immediate postpartum information no greater than two weeks postpartum, this is a time of change and adjustment. Mothers are busy during this time and perceptions may not be entirely accurate.

Because the theoretical framework is complex with multiple interactions (Cox, 1982), inclusion of several variables within the model made it difficult to replicate and reproduce the same set of predictor variables in a different population. Additionally, entry of a large number of variables in the model may have tended to underestimate the predictive capacity of variables that might have otherwise had a certain level of significance (Hazard-Munro, 2001). Use of an unreliable instrument (BFKQ, Form B) may further decrease the magnitude of the correlation coefficient (Polit, 1996). The model, however, accounted for 25.7% of the variance, and the *F* statistic indicates that the accuracy of prediction was improved by contribution of each of the variables entered in the model over what each single variable could achieve alone (Polit, 1996).

Implications for Nursing

Due to the very dynamic nature of breastfeeding, it is essential to address individual needs of the mother. Cox's Interaction Model of Client Behavior (1982) purports the role of the nurse as a facilitator to improve the

decisional control of the mother during the breastfeeding process.

With time-constraints in the inpatient setting (Beger & Cook, 1998), it is difficult for the nurse to cover every topic the mother may need to initiate and maintain breastfeeding. However, without specific information, mothers may prematurely wean due to difficulties experienced with latching on, engorgement, establishing an adequate milk supply, or fitting breastfeeding into their lifestyle. Nurses need to be attuned to the information each mother identifies as important to facilitate her breastfeeding success once she has been discharged from the hospital.

Information necessary to initiate and maintain breastfeeding should initially be offered through one-to-one instruction, and supported with educational material the mother can take home with her. Inclusion of information such as how to manage engorgement, let-down, pumping, maternal nutrition, and when to initiate solids are helpful. This information may help to promote establishment of an adequate milk supply and limit difficulty with confidence in the ability to produce enough milk to meet the needs of the infant (Langley, 1998).

Providing anticipatory guidance may also minimize potential problems the mother might experience upon return

home from the hospital. Discussing what to do when the mother or infant become sick, how to feed discretely in public, and preparation for return to school or work are a few of the concerns which were identified in this study that could be addressed.

Interestingly, mothers who did not receive community referrals for breastfeeding upon discharge from the hospital were more successful with breastfeeding than mothers who received the referrals. However, at least half of mothers at both two and six weeks postpartum found the referrals to be at least somewhat helpful. Mothers also had informal sources of breastfeeding support available to them through friends and relatives that could further help explain the reason for this finding. Despite this unexpected finding, even mothers who have breastfed successfully may experience difficulty at home and could benefit from a resource listing.

Nurses should also be aware of not only content of breastfeeding information, but consistency of information provided among other nurses and health care providers. A more consistent approach enables the mother to feel confident in seeking breastfeeding assistance, rather than being discouraged when advice is confusing or misleading.

Mothers in this study were reliant on the father of the baby, her mother, and friends for support of her

breastfeeding efforts. It would seem an important aspect of breastfeeding instruction to include the significant other(s). Targeting the mother's support persons have been found to be a cost-effective way to improve the duration of breastfeeding (Susin et al., 1999). Collaboration between inpatient nursing services and outpatient services might be one approach to accomplish this education. Hence, the mother not only has an additional informed support during the inpatient setting, but also reinforcement that can enhance the breastfeeding process after hospital discharge.

Breastfeeding confidence was a strong predictor of breastfeeding success. Nurses can explore ways to improve the confidence of first time mothers or mothers who were previously unsuccessful. Interventions such as peer counselor programs have been found to be an effective way to tap into the confidence and experience of others with previous breastfeeding success. This could serve as a positive adjunct for inpatient nursing education (Long, Funk-Archuleta, Geiger, Mozar, & Heins, 1995; Shaw & Kaczorowski, 1999; Schafer et al., 1998).

A charge for nurses is to address their own attitude and knowledge of breastfeeding. Too strong of an encouragement to breastfeed, or feeding formula in the "best interest" of the infant may send inconsistent messages to the mother about breastfeeding. Also,

involvement in changing hospital policy is encouraged. In this way, nurses can be an influential voice in creating programs that foster an environment that promotes, protects, and supports breastfeeding.

Recommendations for Future Studies

Future studies should include samples from varying demographic backgrounds, including those younger than 18 years of age, less affluent, with more limited social supports, and with greater cultural diversity. Modifications in the study design should be considered to reduce natural selection and recall bias. Recruitment from physician offices rather than childbirth classes may be one possible means to reduce selection bias. To minimize recall bias, mothers could complete a survey that included information pertinent to the immediate postpartum period prior to discharge, and complete an additional survey pertaining to information relevant from time of discharge to two weeks postpartum.

One of the factors also known to influence breastfeeding success is smoking status. Women who smoke are less likely to continue breastfeeding (Hill & Aldag, 1996). This variable was not addressed in this study, and may have impacted the outcome measure.

Finally, future research should include research utilization studies based on the findings and implications

from this study. Since the regions in which this study were conducted have high breastfeeding rates, ideal locations may be places where breastfeeding rates continue to be low, such as the southeast central region of the U.S. (Ross, 2000).

Conclusion

A positive relationship between inpatient nursing support and information to breastfeeding success exists. Further, positive social supports and breastfeeding confidence have been identified as predictors of breastfeeding success.

This study suggests breastfeeding success is promoted through education and support that build on an existing level of confidence. Together, continued education and support has a cumulative effect on enhancing the mother's self-reliance, ability to problem-solve, and decisional control. This positive interplay throughout the perinatal period ultimately leads to the success of breastfeeding.

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APPENDIX A

VERBAL SCRIPT

Verbal Script
(Recruitment of participants from classrooms/personal contact)

I am a graduate student under the direction of Professor Susan Mattson in the College of Nursing at Arizona State University. I am conducting a research study to examine the relationship between breastfeeding information and support given by inpatient nurses, maternal factors, and breastfeeding success.

I am recruiting women 18 years or older who are expecting a singleton delivery, plan to breastfeed, and able to read and write English. You will complete a prenatal questionnaire, which will take approximately 15 minutes of your time. If you remain eligible to participate in the study by delivering an infant (37-42 weeks) without any complications that would require intensive care fore you or your baby, you will then complete and return the two week postpartum questionnaire. This questionnaire will take approximately 15 minutes to complete. At six weeks postpartum, you will complete the six week postpartum questionnaire and return it to the researcher. This will take approximately 10 minutes to complete. At that time, your participation in the study will be complete.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, it will not affect the care you are entitled to receive. The results of the research may be published, but your name will not be used. If you have any questions concerning the research study, please call me at 480-730-7788 or 702-647-0448.

APPENDIX B

LETTER OF INFORMATION, LUKE AIR FORCE BASE/ MIKE O'CALLAGHAN FEDERAL HOSPITAL

LETTER OF INFORMATION

Luke Air Force Base Hospital
56th Medical Group
7219 N. Litchfield Road
Glendale, AZ 85309

Privacy Act of 1974 applies. DD Form 2005 filed in Clinical/ Medical Records.

PRIVACY ISSUES: *Records of my participation in this study may only be disclosed in accordance with federal law, including the Federal Privacy Act, 5 USC 552a, and its implementing regulations. DD Form 2005 contains the Privacy Act Statement for the records.*

TITLE OF STUDY

Breastfeeding information and support given by inpatient nurses, maternal factors and breastfeeding success

INVESTIGATORS' NAMES, DEPARTMENTS, PHONE NUMBERS

Linda A. Hagemann, AFIT student, Arizona State University, 480-730-7788/702-647-0448
(under the direction of Dr. Susan Mattson, Thesis Committee Chair, 480-965-8984)

INTRODUCTION

1) Capt Linda A. Hagemann, RN-C, AFIT Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU; 2) You are being asked to take part in this study because you are 18 years or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family; 3) A minimum of 50 women will participate in the study from Luke Air Force Base Hospital, Phoenix, Arizona; 4) Your participation in this study is expected to last for approximately six weeks after delivery; 5) Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher and thesis chair. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed; 6) There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study; 7) Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study; 8) If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

PURPOSE OF STUDY

(This section will explain the nature, purpose(s), approximate number of subjects, and the duration of participants' involvement.)

You are being asked to participate in a research study. The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

PROCEDURES

(This section will explain all procedures and purpose of the procedures to be undergone as part of this study. Any experimental procedures will be explained as such.)

1) During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered; 2) After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete; 3) You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class; 4) The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time; 5) To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete; 6) At six weeks postpartum, open the sealed envelope

containing the six-week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete; 7) If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

BENEFITS

No benefit can be guaranteed. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

ALTERNATIVES

(This section will explain your alternative treatment possibilities)

You may decide not to continue participation in this study. Otherwise, there are no treatment alternatives.

RISKS/INCONVENIENCES

(Any discomfort , risks, inconveniences caused from procedures or drugs used that may be expected from participation in this study.)

The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question.

EVENT OF INJURY

Your entitlement to medical and dental care and/or compensation in the event of injury is governed by federal laws and regulations, and if you have questions about your rights or if you believe you have received a research-related injury, you may contact the 60th Medical Group (DGMC) Patient Relations Monitor, at (707)423-3729, the Director of the Clinical Investigation Facility at (707)423-7400, and/or the investigator Capt Linda Hagemann at 702-647-0448 or 480-730-7788, thesis chair, Dr. Susan Mattson at 480-965-8984, or the Arizona State University IRB through Karol Householder, at 480-965-6788.

AUTHORIZATION FOR RELEASE

(The following statement is to be included and applies **ONLY** if it is known that commercial or outside use of donated samples is anticipated.)

N/A.

DECISION TO PARTICIPATE

1) Voluntary statement: You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep; 2) Consent statement: I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study. I authorize the release of my medical records to the researcher, sponsor, and to the respective military facilities.

My signature below indicates my willingness to participate in this research study.

_____
(Subject's Printed Name)

_____ _____
(Subject's Signature) (Date)

LETTER OF INFORMATION

Mike O'Callaghan Federal Hospital
99th Medical Group
4700 N. Las Vegas Boulevard
Nellis Air Force Base, NV 89191

Privacy Act of 1974 applies. DD Form 2005 filed in Clinical/ Medical Records.

PRIVACY ISSUES: *Records of my participation in this study may only be disclosed in accordance with federal law, including the Federal Privacy Act, 5 USC 552a, and its implementing regulations. DD Form 2005 contains the Privacy Act Statement for the records.*

TITLE OF STUDY

Breastfeeding information and support given by inpatient nurses, maternal factors and breastfeeding success

INVESTIGATORS' NAMES, DEPARTMENTS, PHONE NUMBERS

Linda A. Hagemann, AFIT student, Arizona State University, 480-730-7788/702-647-0448
(under the direction of Dr. Susan Mattson, Thesis Committee Chair, 480-965-8984)

INTRODUCTION

1) Capt Linda A. Hagemann, RN-C, AFIT Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU; 2) You are being asked to take part in this study because you are 18 years or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family; 3) A minimum of 50 women will participate in the study from Mike O'Callaghan Federal Hospital, Las Vegas, Nevada; 4) Your participation in this study is expected to last for approximately six weeks after delivery; 5) Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher and thesis chair. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed; 6) There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study; 7) Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study; 8) If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

PURPOSE OF STUDY

(This section will explain the nature, purpose(s), approximate number of subjects, and the duration of participants' involvement.)

You are being asked to participate in a research study. The purpose of this study is to examine breastfeeding information and support mothers received from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

PROCEDURES

(This section will explain all procedures and purpose of the procedures to be undergone as part of this study. Any experimental procedures will be explained as such.)

1) During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered; 2) After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete; 3) You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class; 4) The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time; 5) To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two-week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete; 6) At six weeks postpartum, open the sealed envelope

containing the six-week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete; 7) If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

BENEFITS

No benefit can be guaranteed. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

ALTERNATIVES

(This section will explain your alternative treatment possibilities)

You may decide not to continue participation in this study. Otherwise, there are no treatment alternatives.

RISKS/INCONVENIENCES

(Any discomfort , risks, inconveniences caused from procedures or drugs used that may be expected from participation in this study.)

The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question.

EVENT OF INJURY

Your entitlement to medical and dental care and/or compensation in the event of injury is governed by federal laws and regulations, and if you have questions about your rights or if you believe you have received a research-related injury, you may contact the 60th Medical Group (DGMC) Patient Relations Monitor, at (707)423-3729, the Director of the Clinical Investigation Facility at (707)423-7400, and/or the investigator Capt Linda Hagemann at 702-647-0448 or 480-730-7788, thesis chair, Dr. Susan Mattson at 480-965-8984, or the Arizona State University IRB through Karol Householder, at 480-965-6788.

AUTHORIZATION FOR RELEASE

(The following statement is to be included and applies ONLY if it is known that commercial or outside use of donated samples is anticipated.)

N/A.

DECISION TO PARTICIPATE

1) Voluntary statement: You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep; 2) Consent statement: I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study. I authorize the release of my medical records to the researcher, sponsor, and to the respective military facilities.

My signature below indicates my willingness to participate in this research study.

_____
(Subject's Printed Name)

_____ _____
(Subject's Signature) (Date)

APPENDIX C

CONSENT FORM, THUNDERBIRD SAMARITAN MEDICAL CENTER

THUNDERBIRD SAMARITAN MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

Patient Name: _____

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

1. Who is conducting this study? Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

2. Invitation to participate. You are being asked to take part in this study because you are 18 years or older, pregnant expecting one baby, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

3. Why is this study being done? The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

4. How many people will take part in this study? A minimum of 50 patients will participate in the research study at Banner Health Systems' Hospital, Thunderbird Samaritan Medical Center, in Glendale, Arizona.

5. What is involved in this study? If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

GSRMC IRB
APPROVED
APR 25 2001
NOT FOR USE AFTER

THUNDERBIRD SAMARITAN MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

6. How long will I be in the study? Your participation in this study is expected to last for approximately six weeks after delivery.

7. What are the foreseeable risks/discomforts and/or benefits of this study? The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

8. What about confidentiality? Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the Good Samaritan Regional Medical Center (GSRMC) Institutional Review Board (IRB).

GSRMC IRB
APPROVED
APR 25 2001
4/3-4/04
NOT FOR USE AFTER

THUNDERBIRD SAMARITAN MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

9. What happens in case of injury? The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns.

10. Is there any cost or compensation for participating? There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study.

11. What are my rights as a participant? Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study.

12. Can I be removed from this study? If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

13. Whom do I call if I have questions? If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788; or

b. Linda Mottle, MSN, RN, TSMC Research Director at 602-588-4704; or

c. Good Samaritan Regional Medical Center IRB at 602-271-9472, Monday through Friday, from 9 a.m. to 5 p.m.

14. Voluntary statement. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

GSRMC IRB
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4/20/01
NOT FOR USE AFTER

THUNDERBIRD SAMARITAN MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

15. Consent statement. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

16. Signature. I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____
Signature of participant Date/Time

_____
Printed name of participant

_____ _____
Signature of legally authorized representative Date/Time

_____
Printed name of legally authorized representative

_____ _____
Signature of witness Date/Time

_____
Printed name of witness

"I certify I have explained to the above individual(s) the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. The elements of Informed Consent conform to the Assurance given by ASU and GSRMC to the Department of Health & Human Services to protect the rights of human subjects. I have provided the participant a copy of this signed and dated consent document."

_____ _____
Signature of principal investigator Date/Time

_____
Printed name of principal investigator

GSRMC IRB
APPROVED
APR 25 2007
4/25/07
NOT FOR USE AFTER

APPENDIX D

CONSENT FORM, DESERT SAMARITAN MEDICAL CENTER

DESERT SAMARITAN MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses, maternal factors and breastfeeding success
INFORMED CONSENT

Patient Name:

_____

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

1. Who is conducting this study? Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

2. Invitation to participate. You are being asked to take part in this study because you are 18 years or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

3. Why is this study being done? The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

4. How many people will take part in this study? A minimum of 50 patients will participate in the research study at Banner Health Systems' Hospital, Desert Samaritan Medical Center, in Mesa, Arizona.

5. What is involved in this study? If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

Desert Samaritan Medical Center
Institutional Review Board
Approval Date: 04-05-01
Expiration Date: 03-22-02

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

6. How long will I be in the study? Your participation in this study is expected to last for approximately six weeks after delivery.

7. What are the foreseeable risks/discomforts and/or benefits of this study? The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

8. What about confidentiality? Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the Desert Samaritan Medical Center (DSMC) Institutional Review Board (IRB).

Desert Samaritan Medical Center
Institutional Review Board
Approval Date: 04-05-01
Expiration Date: 03-22-02

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

9. What happens in case of injury? The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns.

10. Is there any cost or compensation for participating? There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study. Desert Samaritan Medical Center will provide no compensation in the event of injury to subjects or research studies. This does not waive your rights in the result of negligence.

11. What are my rights as a participant? Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study.

12. Can I be removed from this study? If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

13. Whom do I call if I have questions? If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788;

b. Desert Samaritan Medical Center IRB, through Gloria Mawson, at 480-835-3756.

14. Voluntary statement. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

Desert Samaritan Medical Center
Institutional Review Board
Approval Date: 04-05-01
Expiration Date: 03-22-02

15. Consent statement. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

16. Signature. I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____

Signature of participant Date/Time

_____

Printed name of participant

_____ _____

Signature of legally authorized representative Date/Time

_____

Printed name of legally authorized representative

_____ _____

Signature of witness Date/Time

_____

Printed name of witness

"I certify I have explained to the above individual(s) the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. The elements of Informed Consent conform to the Assurance given by ASU and DSMC to the Department of Health & Human Services to protect the rights of human subjects. I have provided the participant a copy of this signed and dated consent document."

_____ _____

Signature of principal investigator Date/Time

_____

Printed name of principal investigator

Desert Samaritan Medical Center
Institutional Review Board
Approval Date: 04-05-01
Expiration Date: 03-22-02

APPENDIX E

CONSENT FORM, GOOD SAMARITAN REGIONAL MEDICAL CENTER

GOOD SAMARITAN REGIONAL MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

Patient Name: _____

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

1. Who is conducting this study? Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

2. Invitation to participate. You are being asked to take part in this study because you are 18 years or older, pregnant expecting one baby, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

3. Why is this study being done? The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

4. How many people will take part in this study? A minimum of 50 patients will participate in the research study at Banner Health Systems' Hospital, Good Samaritan Regional Medical Center, in Phoenix, Arizona.

5. What is involved in this study? If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

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APPROVED
APR 25 2001
NOT FOR USE AFTER

GOOD SAMARITAN REGIONAL MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

6. How long will I be in the study? Your participation in this study is expected to last for approximately six weeks after delivery.

7. What are the foreseeable risks/discomforts and/or benefits of this study? The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

8. What about confidentiality? Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the Good Samaritan Regional Medical Center (GSRMC) Institutional Review Board (IRB).

GSRMC IRB
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APR 25 2001
4/24/01
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GOOD SAMARITAN REGIONAL MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

9. What happens in case of injury? The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns.

10. Is there any cost or compensation for participating? There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study.

11. What are my rights as a participant? Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study.

12. Can I be removed from this study? If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

13. Whom do I call if I have questions? If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788; or

b. Good Samaritan Regional Medical Center IRB at 602-271-9472, Monday through Friday, from 9 a.m. to 5 p.m.

14. Voluntary statement. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

GSRMC IRB
APPROVED
APR 25 2001
NOT FOR USE AFTER

GOOD SAMARITAN REGIONAL MEDICAL CENTER
Breastfeeding information and support given by inpatient nurses,
maternal factors and breastfeeding success
INFORMED CONSENT

15. Consent statement. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

16. Signature. I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____
Signature of participant Date/Time

_____
Printed name of participant

_____ _____
Signature of legally authorized representative Date/Time

_____
Printed name of legally authorized representative

_____ _____
Signature of witness Date/Time

_____
Printed name of witness

"I certify I have explained to the above individual(s) the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. The elements of Informed Consent conform to the Assurance given by ASU and GSRMC to the Department of Health & Human Services to protect the rights of human subjects. I have provided the participant a copy of this signed and dated consent document."

_____ _____
Signature of principal investigator Date/Time

_____
Printed name of principal investigator

APPENDIX F

CONSENT FORM, ST. ROSE DOMINICAN HOSPITAL

BREASTFEEDING INFORMATION AND SUPPORT GIVEN BY INPATIENT NURSES, MATERNAL FACTORS AND BREASTFEEDING SUCCESS

INFORMED CONSENT

Patient Name:

_____

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

1. Who is conducting this study? Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

2. Invitation to participate. You are being asked to take part in this study because you are 18 years or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

3. Why is this study being done? The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby.

4. How many people will take part in this study? A minimum of 50 patients will participate in the research study at St. Rose Dominican Hospital, Barbara Greenspun Women's Care Center of Excellence, Henderson, Nevada.

5. What is involved in this study? If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

6. How long will I be in the study? Your participation in this study is expected to last for approximately six weeks after delivery.

7. What are the foreseeable risks/discomforts and/or benefits of this study? The questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

8. What about confidentiality? Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the St. Rose Dominican Hospital Quality Risk Services Department.

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

9. What happens in case of injury? The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns.

10. Is there any cost or compensation for participating? There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study.

11. What are my rights as a participant? Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. I will tell you about new information developed during the course of the study that may affect your willingness to stay in this study.

12. Can I be removed from this study? If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

13. Whom do I call if I have questions? If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788;

b. St. Rose Dominican Hospital (SRDH) Quality Risk Services Department, through Kevin Gulliver, at 702-616-4824.

14. Voluntary statement. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

15. Consent statement. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this

research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

16. Signature. I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____

Signature of participant Date/Time

_____

Printed name of participant

_____ _____

Signature of witness Date/Time

_____

Printed name of witness

"I certify I have explained to the above individual(s) the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. The elements of Informed Consent conform to the Assurance given by ASU and SRDH to the Department of Health & Human Services to protect the rights of human subjects. I have provided the participant a copy of this signed and dated consent document."

_____ _____

Signature of principal investigator Date/Time

_____

Printed name of principal investigator

APPENDIX G

CONSENT FORM, SUNRISE HOSPITAL AND MEDICAL CENTER

SUNRISE HOSPITAL AND MEDICAL CENTER
INFORMED CONSENT

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

TITLE OF STUDY AND IDENTIFICATION OF SPONSOR. Breastfeeding information and support given by inpatient nurses, maternal factors and breastfeeding success.

Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

PURPOSE. The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby. There will be a total of 400 patients participating in this study, with a minimum of 50 patients to participate in this study at Sunrise Hospital and Medical Center, Las Vegas, Nevada.

You are being asked to take part in this study because you are 18 or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. Your participation in this study is expected to last for approximately six weeks after delivery.

This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

PROCEDURE. If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

IRB APPROVED 4-4-01

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

h. You will be notified of significant new findings developed during the course of this study.

RISKS/DISCOMFORTS. There may be risks currently unknown, however, the questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question.

BENEFITS. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

ALTERNATIVES. None.

CONFIDENTIALITY. Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the Sunrise Hospital and Medical Center Institutional Review Board (IRB).

IRB APPROVED 4.4.01

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

PARTICIPATION. Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

COMPENSATION. There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study. The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns. Any costs incurred for breastfeeding concerns will be your responsibility or the responsibility of your insurance carrier. Sunrise Hospital and Medical Center will not provide compensation or free medical treatment for any injury acquired during the course of the study. None of the above is intended to waive any rights you may otherwise have under applicable law.

WHOM TO CONTACT. If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788; or

b. Sunrise Hospital and Medical Center IRB Chairman or Secretary at 702-731-8211, or write to Medical Staff Services Department, Sunrise Hospital and Medical Center, 3186 Maryland Parkway, Las Vegas, NV 89109. After hours, contact Administrator on call at 702-731-8000.

VOLUNTARY STATEMENT. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

IRB APPROVED 2.4.01

CONSENT STATEMENT. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

I authorize the release of my medical records to the researcher, sponsor, and to Sunrise Hospital and Medical Center.

I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____

Signature of participant Date/Time

_____

Printed name of participant

_____ _____

Signature of legally authorized representative Date/Time

_____

Printed name of legally authorized representative

_____ _____

Signature of witness Date/Time

_____

Printed name of witness

IRB APPROVED 4.4.01

APPENDIX H

CONSENT FORM, MOUNTAINVIEW HOSPITAL

MOUNTAINVIEW HOSPITAL
INFORMED CONSENT

This consent form may contain words that you do not understand. Please ask the researcher to explain any words or information that you do not clearly understand.

This patient information and consent form is for use in a research study which may involve both patients who do and do not have the legal capacity to consent to their participation. Accordingly, when the patient cannot legally consent to participate, the pronouns "you" and "your" should be read as referring to the patient rather than the legally authorized representative who is signing the form to give consent for the patient.

TITLE OF STUDY AND IDENTIFICATION OF SPONSOR. Breastfeeding information and support given by inpatient nurses, maternal factors and breastfeeding success.

Linda A. Hagemann, RN-C, Graduate Student, Women's Health Nurse Practitioner Program, Arizona State University (ASU) will be conducting the study as partial fulfillment of her thesis. She will be under the direction of Susan Mattson, PhD, Thesis Committee Chair, ASU.

PURPOSE. The purpose of this study is to examine breastfeeding information and support mothers receive from nurses during their hospital stay after delivery of their baby, and the relationship(s) to maternal factors and breastfeeding success at two weeks and six weeks after the delivery of your baby. There will be a total of 400 patients participating in this study, with a minimum of 50 patients to participate in this study at Mountainview Hospital, Las Vegas, Nevada.

You are being asked to take part in this study because you are 18 or older, pregnant expecting a singleton delivery, plan to breastfeed your baby, and able to read and write English. To remain in the study, you must deliver a term infant (between 37-42 weeks) and you or your baby will not have experienced any complications that would require intensive care. Your participation in this study is expected to last for approximately six weeks after delivery.

This is a voluntary research study. Research studies include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family.

PROCEDURE. If you agree to participate in this study, the following will occur as a result of your participation:

a. During a prenatal class, you will be asked to read this Informed Consent form, and sign it after all your questions have been answered.

b. After you have accepted to participate in this study, you will be asked to complete a record keeping card and prenatal questionnaire. This will require approximately 15 minutes to complete.

IRB APPROVED 6-11-01

c. You will be provided with the two week and six week postpartum questionnaires in sealed envelopes at the prenatal class.

d. The researcher will contact you within one week of your expected due date as a reminder to complete the two week and six week postpartum questionnaires. You may provide the researcher with any updated information at that time.

e. To remain eligible to participate in the study, you must deliver a term infant (37-42 weeks) without complications that would require intensive care for you or your baby. If you are eligible for continued participation in the study, at two weeks postpartum, open the sealed envelope containing the two week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take you approximately 15 minutes to complete.

f. At six weeks postpartum, open the sealed envelope containing the six week postpartum questionnaire. Complete the questionnaire and return it to the researcher in the envelope provided. This questionnaire will take approximately 10 minutes to complete.

g. If the researcher has not received the questionnaires within one to two weeks of their expected return dates, the researcher will attempt follow-up by phone, e-mail, or mailings to ensure your valued information is included in this study.

h. You will be notified of significant new findings developed during the course of this study.

RISKS/DISCOMFORTS. There may be risks currently unknown, however, the questionnaires are designed to be completed in a setting that is comfortable to you at your convenience. If you do not want to answer a question for any reason, please understand you do not have to answer that question.

BENEFITS. By participating in this study, you will be contributing to the overall knowledge regarding information and support given during your hospitalization and your breastfeeding success.

ALTERNATIVES. None.

CONFIDENTIALITY. Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

a. Only your study code number will be used to identify information about you gathered during the study. Information from this study will be kept in a locked file cabinet and inspected only by the researcher, thesis chair, and the Sunrise Hospital and Medical Center Institutional Review Board (IRB).

IRB APPROVED 6/11/01

b. Results of the research study may be presented at meetings or published, but your name or identity will not be revealed.

PARTICIPATION. Your participation in this study is voluntary. You are free to refuse to participate in the study or you may withdraw from the study at any time without change in the quality of medical care or loss of benefits to you which you are entitled to at this site. If you are unable to be reached and have not completed the two week and six week postpartum questionnaires, you will be removed from this study.

COMPENSATION. There will be no cost to you except for the time required to complete and return the questionnaires. No additional compensation will be provided for participation in this study. The researcher will provide no breastfeeding advice. Should you experience difficulty with breastfeeding during the study, the researcher can provide you with community referrals to address any breastfeeding concerns. Any costs incurred for breastfeeding concerns will be your responsibility or the responsibility of your insurance carrier. Mountain View Hospital will not provide compensation or free medical treatment for any injury acquired during the course of the study. None of the above is intended to waive any rights you may otherwise have under applicable law.

WHOM TO CONTACT. If you have any questions about this research study, you may contact the researcher at 480-730-7788, 702-647-0448, or 702-278-1095, or by e-mail at lhagemann@earthlink.net. You may also contact the researcher's thesis advisor, Dr. Susan Mattson, at 480-965-8984 or by e-mail at Susan.Mattson@asu.edu.

If you have questions about rights as a participant in this research or feel you have been placed at risk or suffered a research-related problem, contact:

a. ASU Chair of the Human Subjects IRB, through Karol Householder, at 480-965-6788; or

b. Sunrise Hospital and Medical Center IRB Chairman or Secretary at 702-731-8211, or write to Medical Staff Services Department, Sunrise Hospital and Medical Center, 3186 Maryland Parkway, Las Vegas, NV 89109. After hours, contact Administrator on call at 702-731-8000.

VOLUNTARY STATEMENT. You are voluntarily making a decision whether or not to participate in the research study described above. Your signature indicated that you have read the information provided above and have decided to participate in this research project. You will be given a signed and dated copy of this consent form to keep.

IRB APPROVED 6-11-01

CONSENT STATEMENT. I have read and understand the above information. I have asked questions and discussed details of the study with the researcher. I agree to participate in this research study based upon the information provided. I understand that I will receive a signed and dated copy of this consent form. And, I agree that my physician will be informed of my participation in this study.

I authorize the release of my medical records to the researcher, sponsor, Mountainview Hospital, and to Sunrise Hospital and Medical Center.

I agree to take part in this study. By signing and dating this consent form, I have not waived any of the legal rights which I would have otherwise, if I were not a participant in the breastfeeding research study.

_____ _____

Signature of participant Date/Time

_____

Printed name of participant

_____ _____

Signature of legally authorized representative Date/Time

_____

Printed name of legally authorized representative

_____ _____

Signature of witness Date/Time

_____

Printed name of witness

IRB APPROVED 6-11-01

APPENDIX I

RECORD KEEPING CARD

Record Keeping Card

Today's date: _____

Study Code No.: _____

Name: _____
(Last name) (First name) (MI)

Address: _____

_____

_____ _____ _____
(City) (State) (Zip code)

Phone: _____
(Area code)

Email: _____

Fax: _____

Due date: _____

How many weeks pregnant are you today? _____

(To be completed by researcher):

Delivery date: _____

Prenatal questionnaire: _____

Two week postpartum questionnaire: _____

Six week postpartum questionnaire: _____

Hospital: _____

APPENDIX J

PRENATAL QUESTIONNAIRE

Prenatal Questionnaire

Background Data

Study code no.	Age:	Date completed:	Due date:

Household income **(please check the answer that best applies to you):**

_____ Less than $10,000	_____ $50,000 to $59,999
_____ $10,000 to $19,999	_____ $60,000 to $69,999
_____ $20,000 to $29,999	_____ $70,000 to $79,999
_____ $30,000 to $39,999	_____ $80,000 to $89,999
_____ $40,000 to $49,999	_____ $90,000 or more

Marital status **(please check the answer that best applies to you):**

_____ Single/never married	_____ Married
_____ Separated	_____ Widowed
_____ Divorced	_____ Living with baby's father

Race/ethnicity **(please check the answer that best applies to you):**

_____ Caucasian	_____ Native American
_____ Black	_____ Hispanic
_____ Asian/Pacific Islander	_____ Other

Educational level **(please check the answer that best applies to you):**

_____ Less than 12 years	_____ Post baccalaureate
_____ H.S. diploma, GED or equivalent	_____ Master's degree
_____ Some college	_____ Post master's
_____ Associate's degree	_____ Ph.D.
_____ Bachelor's degree	_____ Other

Breastfeeding experience **(please check the answer that best applies to you):**

_____ First time mother
_____ Have other children, no breastfeeding experience
_____ Have other children, attempted breastfeeding without success
_____ Have other children, attempted breastfeeding with success

Social support for breastfeeding **(please circle all that apply to you; use the following scale):**

1-**Not applicable**; 2-Not supportive; 3-Sometimes supportive; 4-Usually supportive; 5-Always supportive

1 2 3 4 5 Baby's father	1 2 3 4 5 Obstetrician
1 2 3 4 5 Mother	1 2 3 4 5 Pediatrician
1 2 3 4 5 Sister	1 2 3 4 5 Nurse
1 2 3 4 5 Grandmother	1 2 3 4 5 Lactation consultant
1 2 3 4 5 Friend(s)	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's mother	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's sister	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's grandmother	

Employment/School **(please check the answer that best applies to you/fill in the blank)**

Do you plan to return to work/school?	If yes, when do you plan to return following delivery (answer in weeks or months)?
_____ Yes _____ No _____ Undecided	_____ weeks - or - _____ months

Breastfeeding intent **(please fill in the blank/check the answer that best applies to you):**

How long do you plan to breastfeed your baby?	Do you plan to supplement with formula?
_____ weeks; or _____ months; or _____ Don't know or undecided	_____ Yes (specify ounces/day) _____ _____ No _____ Don't know or undecided

Feelings about breastfeeding **(Please circle your response using the following scale):**
1 – Very unsure; 2 – Somewhat Unsure; 3 – Neutral; 4 – Somewhat sure; 5 – Very sure

	Very Unsure				Very Sure
How certain do you feel that you will be able to breastfeed for the intended period of time?	1	2	3	4	5

How confident do you feel that you will be able to breastfeed under the following circumstances if they occur while you are breastfeeding?

	Very Unsure				Very Sure
A premature baby who needed to stay in the hospital	1	2	3	4	5
A cesarean section	1	2	3	4	5
Baby has a difficult time learning to suck or latch	1	2	3	4	5
Breast/nipples hurt	1	2	3	4	5
Baby appears hungry all the time	1	2	3	4	5
In a public place	1	2	3	4	5
Your milk supply seems to decrease	1	2	3	4	5
Pressure from others to formula feed or supplement	1	2	3	4	5
If baby bites	1	2	3	4	5
If you get sick	1	2	3	4	5

Breastfeeding Knowledge (Form A)

Directions: The following questions are about breastfeeding. Read each of the following questions. Select the one best answer and circle the correct letter. Please attempt to answer all questions.

1. Breast milk is better than formula for a baby for all of the following reasons except:
   A. Breast milk is more easily digested.
   B. There is less chance of intestinal infections.
   C. There is less chance of developing allergies.
   D. Breast milk contains the right amounts of needed fat and protein.
   E. There is more rapid weight gain with breast milk.

2. Breastfeeding keeps the mother from getting pregnant.
   A. True
   B. False

3. Breastfeeding is good for the figure.
   A. True
   B. False

4. Breastfeeding is convenient.
   A. True
   B. False

5. Breastfeeding saves money.
   A. True
   B. False

6. Breastfeeding is pleasurable.
   A. True
   B. False

7. The best breast size for a mother to be successful in breastfeeding her baby is
   A. Small breasts.
   B. Average size breasts.
   C. Large breasts.
   D. No particular size.
   E. Don't know.

8. When the mother breastfeeds, how should she begin the feeding?
   A. Begin with the same breast at each feeding.
   B. Begin feeding with the breast she ended with at the last feeding.
   C. It does not matter which breast she starts feeding with.
   D. Begin feeding with the breast the baby likes best.

9. How often do you think the baby will probably want to breastfeed during the first few weeks?
   A. Every 2-3 hours.
   B. Every 3-4 hours.
   C. Every 4-5 hours.
   D. Every 5-6 hours.

10. What is the best way to get the baby to begin sucking?
    A. Take the dark area of the nipple and gently stroke the cheek with the nipple.
    B. Open the baby's mouth by pressing in on both cheeks.
    C. Brush the upper lip with the nipple.
    D. Hold the baby's head and guide the face toward the nipple.

11. What is the length of time the baby should be allowed to nurse at each breast during each feeding?
    A. No more than 2 minutes.
    B. About 5 minutes.
    C. About 10 minutes.
    D. About 15 minutes.
    E. As long as the baby wishes.

12. The best way to remove the baby from the nipple and breast is to:
    A. Take the baby's head and gently pull away from the breast.
    B. Gently pull the breast away from the baby.
    C. Insert your finger inside the baby's mouth to break suction.
    D. Tickle the baby's chin and cheek.

13. The breastfeeding mother can help keep from getting sore nipples by doing all of the following actions except:
    A. Washing the nipples often with lots of soap.
    B. Air drying the nipples after each feeding.
    C. Breastfeeding baby in different positions.
    D. Squeezing milk out of the breast before feeding the baby.

14. Which action is not important for the mother in producing breast milk?
    A. Getting extra rest and sleep
    B. Taking in foods that contain calcium
    C. Baby sucking at the breast
    D. Eating an adequate diet
    E. Maintaining pregnancy breast size

15. What advice would you give a mother who has painfully full breasts and her baby has difficulty getting hold of the nipple?
    A. Breastfeed the baby more often.
    B. Ask for medicine to control milk production.
    C. Give the baby a bottle of formula.
    D. Do nothing.

16. If the baby is getting enough breast milk, all of the following will be true except:
    A. The baby will gain weight steadily.
    B. The baby will rarely cry.
    C. The baby will have 6-8 wet diapers daily.
    D. The baby will be content.

17. The breastfeeding mother may need _____ calories than the non-breastfeeding mother.
    A. Less calories.
    B. More calories.
    C. No more calories.

18. In your opinion, how can the mother best help the milk flow so that the baby can get the milk that is within the breast?
    A. Drink a glass of water before or during the breastfeeding time.
    B. Breastfeed the baby frequently.
    C. Eat good meals.
    D. Remain calm, relaxed with a positive attitude.

19. The amount of milk that the mother produces is determined by:
    A. The amount of milk the baby takes.
    B. The amount of fluid the mother drinks.
    C. The amount of rest the mother gets.
    D. The amount of exercise the mother gets.

20. What can the mother do to help with overly full uncomfortable breasts?
    A. Wear a tight bra.
    B. Limit the amount of fluid she drinks.
    C. Apply warm moist cloths and squeeze some milk out.
    D. Ask for medicine to control milk production.

Which of the following actions by the mother is helpful in dealing with a sleepy baby close to feeding time? (circle the correct answer for each item)

21. Loosen the baby's blankets and clothing	True	False
22. Change the baby's diaper	True	False
23. Talk and play with the baby	True	False
24. Let the baby sleep 8 hours during the day	True	False
25. Rub the baby's tummy and pat the baby's feet	True	False

Which of the following best describes a baby that is sucking in the right way?

26. The baby's lips fall on the dark area (areola)	True	False
27. The nipple rests between the upper tongue surface and roof of the baby's mouth	True	False
28. Slow up and down jaw motions occur during active nursing	True	False
29. The baby's mouth grasps the tip of the nipple area	True	False
30. The baby's cheeks will pull inward during sucking	True	False

31. How do bowel movements of a breastfed baby differ from a formula fed baby?
    A. Stools of breastfed babies are the same as the bottle fed babies.
    B. Stools of breastfed babies are usually more constipated than bottle fed babies.
    C. Stools of breastfed babies are looser and more frequent than bottle fed babies.
    D. Stools of breastfed babies smell bad and are brown in color.

32. When should a mother who is breastfeeding start solid foods such as baby cereals or fruit?
    A. 2-3 weeks of age
    B. 4-6 weeks of age
    C. 2-3 months of age
    D. 4-6 months of age

APPENDIX K

TWO WEEK POSTPARTUM QUESTIONNAIRE

Two Week Postpartum Questionnaire

Background Data

Study code no.	Delivery date: _____ Discharge date: _____	Date questionnaire completed:

1. How many weeks pregnant were you when you delivered? _____ weeks
2. Did your hospitalization require intensive care for you or your baby? ____ Yes ____ No

If you were less than 36 weeks at the time of delivery or you or your baby required intensive care, you may stop here. Return the uncompleted questionnaire to the researcher in the envelope provided.

If you were between 36-42 weeks at the time of delivery and you or your baby did not require intensive care, complete this questionnaire and return it to the researcher in the envelope provided.

Type of delivery **(please check the answer that best applies to you):**

_____ Vaginal delivery
_____ Vaginal delivery with vacuum or forceps assistance
_____ Cesarean section, planned
_____ Cesarean section, unplanned

Prenatal breastfeeding education **(please check all answers that apply to you and fill in the blanks):**

_____ Childbirth class with breastfeeding instruction (specify time spent on breastfeeding information: _____ minutes)
_____ Breastfeeding class (specify time: _____ minutes)
_____ Reading books/pamphlets on your own (specify time: _____ minutes)
_____ Instruction from your obstetrician/pediatrician (specify time: _____ minutes)

Delivery setting **(please check all answers that apply to you and fill in the blanks):**

_____ I was able to have my baby room-in with me during my hospital stay (specify amount of time: _____ **hours/day**)
_____ I was able to breastfeed my baby after delivery (specify how long following delivery: _____ **hours**)
_____ My baby was given a pacifier to use during my hospital stay (specify number times during day: _____)
_____ My baby was given formula supplementation during my hospital stay (specify amount: ____ **oz./day**)
_____ Yes _____ No I was given a formula gift pack upon discharge from the hospital
_____ Yes _____ No I was given a list of community resources available for breastfeeding assistance/support

Breastfeeding resources **(please choose the answer that best applies to you; use the following scale):**
1 – Did not need to use; 2 – Not helpful at all; 3 – Somewhat helpful; 4 – Usually helpful; 5 – Very helpful

If you were given breastfeeding resources, please answer the following:
The breastfeeding resources I was given after discharge were: 1 2 3 4 5

Social support for breastfeeding **(please circle all answers that apply to you; use the following scale):** 1 – Not applicable 2 – Not supportive 3 - Sometimes supportive 4 – Usually supportive 5 - Always supportive

1 2 3 4 5 Baby's father	1 2 3 4 5 Obstetrician
1 2 3 4 5 Mother	1 2 3 4 5 Pediatrician
1 2 3 4 5 Sister	1 2 3 4 5 Nurse (other than hospital nurses)
1 2 3 4 5 Grandmother	1 2 3 4 5 Lactation consultant
1 2 3 4 5 Friend(s)	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's mother	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's sister	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's grandmother	

Baby's information **(please check the answer that best applies to you and fill in the blanks):**

_____ I had a baby boy _____ I had a baby girl
Baby's birth weight: _____ pounds _____ ounces
Baby's 2 week weight: _____ pounds _____ ounces

Breastfeeding status **(please check the answer that best applies to you/fill in the blanks):**

Are you still breastfeeding? _____ Yes _____ No	If not, when did you stop? _____ weeks Reason(s) for stopping (please specify): _____ _____ _____

Supplementation **(please check the answer in each column that best applies to you):**

How are you feeding your baby now?	If breastfeeding or feeding breast milk, how often do you feed your baby?	If breastfeeding or feeding breast milk, how long does the baby nurse/do you pump each feed? (Total time)	If supplementing with formula, how many ounces/day does your baby drink?
_____ Breast only _____ Formula only _____ Breast and formula _____ Breast milk in a bottle	_____ Every hour _____ 2 hours _____ 3 hours _____ 4 hours _____ 5 hours _____ 6 hours or longer	_____ < 5 minutes _____ 5-10 minutes _____ 11-15 minutes _____ 16-20 minutes _____ 21-25 minutes _____ 26-30 minutes _____ >30 minutes _____ Other (specify: _____)	_____ Less than 1 oz. _____ 1 ounce _____ 2 ounces _____ 3 ounces _____ 4 ounces _____ > four ounces (specify: ____) _____ Don't know

1. If supplementing, are you giving this amount of formula for a particular reason?
   - _____ Starting to wean for work
   - _____ So baby's father can help
   - _____ Doctor advised
   - _____ Baby hungry/not enough breast milk
   - _____ Other (please specify: _____)

2. If feeding breast milk in a bottle, are you feeding with this method for a particular reason? (Please specify: _____)

3. Have you given your baby any solid food?

_____ Yes, check all that apply	_____ Cereal	____ times per day
_____ No	_____ Fruit	____ times per day
	_____ Vegetable	____ times per day
	_____ Other (please specify: _____)	____ times per day

Method of teaching

The following questions concern the time you were in the hospital for delivery of your baby and up to two weeks postpartum (check the answer that best applies to you):

	Yes	No
1. Did the hospital nurses offer you videotapes on breastfeeding?	_____	_____
2. Did the hospital nurses offer you one-to-one teaching on breastfeeding?	_____	_____
3. Did the hospital nurses offer you classes on breastfeeding?	_____	_____
4. Did the hospital nurses offer you handouts on breastfeeding?	_____	_____
5. Did you see the videotapes on breastfeeding?	_____	_____

	Yes	No
6. Did you use the one-to-one teaching?	____	____
7. Did you attend the class(es) on breastfeeding?	____	____
8. Did you read the handouts on breastfeeding?	____	____
9. Did the hospital nurse provide breastfeeding instruction for your significant other(s)?	____	____
10. Did you receive breastfeeding assistance by anyone other than a nurse during your hospital stay? (If so, please specify _____)	____	____
11. Did you receive any additional breastfeeding information since your discharge from the hospital? (If yes, please specify: _____ _____)	____	____

Nursing support **(please circle the answer that best applies to you; use the following scale):**

1 – Strongly disagree; 2 – Disagree; 3 – Uncertain; 4 – Agree; 5 – Strongly agree

The hospital nurses:	Strongly disagree				Strongly agree
1. Assisted me to feel comfortable with my decision to breastfeed.	1	2	3	4	5
2. Gave me encouragement in my breastfeeding.	1	2	3	4	5
3. Were not helpful in my breastfeeding efforts.	1	2	3	4	5
4. Were sensitive to my needs as a breastfeeding mother.	1	2	3	4	5
5. Had a negative attitude about breastfeeding.	1	2	3	4	5
6. Gave me smiles and respect for breastfeeding.	1	2	3	4	5
7. Were not interested in my breastfeeding efforts.	1	2	3	4	5
8. Helped me feel confident about my breastfeeding.	1	2	3	4	5
9. Were supportive of my desire to breastfeed.	1	2	3	4	5
10. Believed that breastfeeding was not worth the effort.	1	2	3	4	5
11. Were not available to support my breastfeeding efforts.	1	2	3	4	5
12. Helped me feel good about breastfeeding my baby	1	2	3	4	5

Nursing information **(please check the answer that best applies to you in <u>column A</u>; use the following scale and circle the answer that best applies to you in <u>column B</u>):**
1 – Strongly disagree; 2 – Disagree; 3 – Uncertain; 4 – Agree; 5 – Strongly agree

A	B					
Did the hospital nurse give you information in any form on: How to position the baby for breastfeeding? _____ Yes _____ No _____ Don't know	**How do you react to the statement:** "I needed more information on positioning my baby."	Strongly disagree 1	2	3	4	Strongly agree 5
How to care for painful nipples? _____ Yes _____ No _____ Don't know	"I had enough information about caring for painful nipples."	1	2	3	4	5
How to relieve engorgement? _____ Yes _____ No _____ Don't know	"I needed more information about how to relieve engorgement."	1	2	3	4	5
How to pump your breasts and express milk? _____ Yes _____ No _____ Don't know	"I needed more information on how to pump my breasts and express milk."	1	2	3	4	5
What to eat and drink as a nursing mother? _____ Yes _____ No _____ Don't know	"I had enough information on what to eat and drink as a nursing mother."	1	2	3	4	5
How to make your milk let down? _____ Yes _____ No _____ Don't know	I needed more information On making my milk let down."	1	2	3	4	5
When to begin solids? _____ Yes _____ No _____ Don't know	"The information I received on when to start solids was adequate for my needs."	1	2	3	4	5
How often to nurse the baby? _____ Yes _____ No _____ Don't know	"I needed more information on how often to nurse my baby."	1	2	3	4	5
	"Overall, I needed more information on breastfeeding during my hospital stay."	1	2	3	4	5
	"In general, the information I received on breastfeeding was adequate for my needs."	1	2	3	4	5

Breastfeeding Knowledge (Form B)
Directions: The following questions are about breastfeeding. Read each of the following questions. Select the one <u>best</u> answer and circle the correct letter. Please attempt to answer all questions.

In your opinion, why is it better to give a baby breast milk rather than formula?

1. Breast milk is more easily digested. True False

2. Breastfed babies have less chance of intestinal infections. True False

3. Breastfed babies have less chance of developing allergies. True False

Breastfeeding Knowledge (Form B, cont.)

4. Breastfed babies have more rapid weight gain. True False

5. Breast milk contains the right amounts of fat and protein. True False

6. Benefits of breastfeeding over bottle feeding for the mother include all of the following <u>except</u>:
   A. Keeps the mother from getting pregnant while breastfeeding.
   B. Breastfeeding is good for the figure.
   C. Breastfeeding saves money.
   D. Breastfeeding is pleasurable.
   E. Breastfeeding is convenient.

7. In your opinion, what size breasts should a mother have to successfully breastfeed her baby?
   A. Small breasts.
   B. Average size breasts.
   C. Large breasts.
   D. No particular size.
   E. Don't know.

8. In your opinion, how often should a mother expect to breastfeeding during the first few weeks?
   A. Every 2-3 hours.
   B. Every 4-5 hours.
   C. Every 6 hours.
   D. Don't know.

9. Each time when starting to breastfeed, how should the mother begin the feeding?
   A. Begin with the same breast at each feeding.
   B. Begin feeding with the breast the baby ended with at the last feeding.
   C. It does not matter which breast the baby starts feeding with.
   D. Begin feeding with the breast which is most convenient to the mother.

10. What is the best way to get the baby to begin sucking?
    A. Hold the baby's head and guide the face toward the nipple.
    B. Touch the corner of the baby's mouth with your nipple.
    C. Open the baby's mouth by pressing in on both of the cheeks.
    D. Brush the upper lip with the nipple.
    E. When the baby cries, quick pop in the nipple.

11. In your opinion, how many minutes should a mother breastfeed her baby at each feeding?
    A. No more than 2 minutes on each breast.
    B. About 5 minutes on each breast.
    C. About 10 minutes on one breast.
    D. As long as the baby wishes.

12. In your opinion, which of the actions should be avoided when removing the baby from the breast?
    A. Pull the baby from the breast while nursing.
    B. Place your little finger into a corner of the baby's mouth to break the suction.
    C. Pull the baby's chin down.
    D. Don't know.

What would you tell a mother to do to avoid getting sore nipples?

13. Expose her nipples to air. True False

14. Breastfeed baby in different positions. True False

15. Put baby on the breast when milk starts to leak. True False

16. Apply breast cream after each feeding. True False

17. Apply alcohol to nipples daily to toughen them. True False

18. What is the most important factor in producing breast milk?
    A. Drinking at least 1 quart of milk daily.
    B. Getting extra sleep.
    C. Letting the baby suck at the breast.
    D. Receiving help from others with routine housework.

19. What is the most important action a mother can do to help prevent her breasts from becoming overly full and uncomfortable?
    A. Wear a tight bra.
    B. Limit the amount of fluid she drinks.
    C. Ask for medicine to control milk production.
    D. Have the baby nurse more frequently.

20. You can be sure that the baby is getting enough milk if:
    A. The baby sleeps long periods and rarely cries.
    B. The baby is contented and has 6-8 wet diapers daily.
    C. The baby gains weight daily.
    D. The baby gains the same weight as your friend's infant who is breastfed.

21. Could a mother who is breastfeeding need less, more, or the same amount of calories as she would if she were not breastfeeding?
    A. Less calories.
    B. More calories.
    C. The same amount of calories.

22. Which of the following actions does not help in causing breast milk to flow freely?
    A. Remaining calm, relaxed with a positive attitude.
    B. Eating good meals.
    C. Drinking a glass of water or milk before or during the nursing period.
    D. Taking a tranquilizer just before the feeding.

23. Which of the following actions has nothing to do with the amount of milk that the mother produces?
    A. Getting plenty of rest and sleep.
    B. Eating good meals.
    C. Taking a hot shower shortly before feeding.
    D. Drinking plenty of fluids.
    E. Breastfeeding the baby frequently.

What can a mother do to help with overly full uncomfortable breasts?

24. Wear a tight bra.	True	False
25. Apply warm cloths to the breasts.	True	False
26. Squeeze some breast milk out with her hand.	True	False
27. Breastfeed frequently.	True	False
28. Expose her nipples to the air.	True	False

29. Which one of the following actions should the mother avoid if she has a sleepy baby at feeding time?
    A. Let him sleep 8 hours during the day.
    B. Loosen the baby's blankets and clothing.
    C. Change the baby's diaper.
    D. Talk and play with the baby.
    E. Rub the baby's tummy and pat the baby's feet.

30. Which of the following best describes a baby sucking in the wrong way?
    A. The baby's lips fall on the dark area (areola).
    B. The nipple rests between the upper tongue surface and the roof of the baby's mouth.
    C. Slow up and down jaw motions occur during active nursing.
    D. The baby's mouth grasps the end of the nipple area.

31. Bowel movements of a breastfed baby are:
    A. The same as the formula fed baby.
    B. Usually more constipated than the formula fed baby.
    C. Usually looser and more frequent than the formula fed baby.
    D. Brown in color.
    E. Foul smelling.

32. In your opinion, most healthy, full-term babies who are breastfed do not need solids until they are about:

A. 1-2 months of age.
B. 2-3 months of age.
C. 3-4 months of age.
D. 4-6 months of age.

APPENDIX L

SIX WEEK POSTPARTUM QUESTIONNAIRE

Six Week Postpartum Questionnaire

Background Data

Study code no.	Date questionnaire completed:

If you stopped breastfeeding before the baby was two weeks old, you may stop here. Return the uncompleted questionnaire to the researcher in the envelope provided.

If you breastfed your baby longer than two weeks, complete this questionnaire and return it to the researcher in the envelope provided.

Breastfeeding resources **(please choose the answer that best applies to you; use the following scale):**
1 – Did not need to use; 2 – Not helpful at all; 3 – Somewhat helpful; 4 – Usually helpful; 5 – Very helpful

If you were given breastfeeding resources, please answer the following:

The breastfeeding resources I was given after discharge were: 1 2 3 4 5

Social support for breastfeeding **(please circle all that apply to you; use the following scale):**
1 – Not applicable 2 – Not supportive 3 - Sometimes supportive 4 – Usually supportive 5 - Always supportive

1 2 3 4 5 Baby's father	1 2 3 4 5 Obstetrician
1 2 3 4 5 Mother	1 2 3 4 5 Pediatrician
1 2 3 4 5 Sister	1 2 3 4 5 Nurse
1 2 3 4 5 Grandmother	1 2 3 4 5 Lactation consultant
1 2 3 4 5 Friend(s)	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's mother	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's sister	1 2 3 4 5 Other (specify) _____
1 2 3 4 5 Baby's father's grandmother	

Baby's information **(please fill in the blanks):**

Baby's 6 week weight: _____ pounds _____ ounces

*(Use 8 week weight if 6 week weight is not available and annotate)

Breastfeeding status **(please check the answer that best applies to you/fill in the blanks):**

Are you still breastfeeding? _____ Yes _____ No	If not, when did you stop? _____ weeks Reason(s) for stopping (please specify): _____ _____ _____

Supplementation **(please check the answer in each column that best applies to you):**

How are you feeding your baby now?	If breastfeeding or feeding breast milk, how often do you feed your baby?	If breastfeeding or feeding breast milk, how long does the baby nurse/do you pump each feed? (Total time)	If supplementing with formula, how many ounces/day does your baby drink?
_____ Breast only _____ Formula only _____ Breast and formula _____ Breast milk in a bottle	_____ Every hour _____ 2 hours _____ 3 hours _____ 4 hours _____ 5 hours _____ 6 hours or longer	_____ < 5 minutes _____ 5-10 minutes _____ 11-15 minutes _____ 16-20 minutes _____ 21-25 minutes _____ 26-30 minutes _____ >30 minutes _____ Other (specify: _____)	_____ Less than 1 oz. _____ 1 ounce _____ 2 ounces _____ 3 ounces _____ 4 ounces _____ > four ounces (specify: ____) _____ Don't know

1. If supplementing, are you giving this amount of formula for a particular reason?
   - _____ Starting to wean for work
   - _____ So baby's father can help
   - _____ Doctor advised
   - _____ Baby hungry/not enough breast milk
   - _____ Other (please specify: _____)

2. If feeding breast milk in a bottle, are you feeding with this method for a particular reason? (Please specify: _____)

3. Have you given your baby any solid food?

_____ Yes, check all that apply	_____ Cereal	____ times per day
_____ No	_____ Fruit	____ times per day
	_____ Vegetable	____ times per day
	_____ Other (Please specify: _____)	____ times per day)

Maternal Breastfeeding Evaluation Scale (MBFES)

If you breastfed more than one baby, base your answers on the most recent experience. Consider the overall breastfeeding experience, and please attempt to answer all questions. Indicate your agreement or disagreement with each statement by circling the best answer, using the following scale:

	Strongly Disagree	Disagree	No opinion/ Unsure	Agree	Strongly Agree
1. With breastfeeding I felt a sense of inner contentment.	1	2	3	4	5
2. Breastfeeding was a special time with my baby.	1	2	3	4	5
3. My baby wasn't interested in breastfeeding.	1	2	3	4	5
4. My baby loved to nurse.	1	2	3	4	5
5. It was a burden being my baby's main source of food.	1	2	3	4	5
6. I felt extremely close to my baby when I breastfed.	1	2	3	4	5
7. My baby was an eager breastfeeder.	1	2	3	4	5
8. Breastfeeding was physically draining.	1	2	3	4	5
9. It was important to me to be able to nurse.	1	2	3	4	5
10. While breastfeeding, my baby's growth was excellent.	1	2	3	4	5
11. My baby and I worked together to make breastfeeding go smoothly.	1	2	3	4	5
12. Breastfeeding was a very nurturing, maternal experience.	1	2	3	4	5
13. While breastfeeding, I felt self-conscious about my body.	1	2	3	4	5
14. While breastfeeding, I felt too tied down all the time.	1	2	3	4	5
15. While breastfeeding, I worried about my baby gaining enough weight.	1	2	3	4	5
16. Breastfeeding was soothing when my baby was upset or crying.	1	2	3	4	5
17. Breastfeeding was like a high of sorts.	1	2	3	4	5
18. The fact that I could produce the food to feed my own baby was very satisfying.	1	2	3	4	5
19. In the beginning, my baby had trouble breastfeeding.	1	2	3	4	5
20. Breastfeeding made me feel like a good mother.	1	2	3	4	5

Maternal Breastfeeding Evaluation Scale (MBFES)

If you breastfed more than one baby, base your answers on the most recent experience. Consider the overall breastfeeding experience, and please attempt to answer all questions. Indicate your agreement or disagreement with each statement by circling the best answer, using the following scale:

	Strongly Disagree	Disagree	No opinion/ Unsure	Agree	Strongly Agree
21. I really enjoyed nursing.	1	2	3	4	5
22. While breastfeeding, I was anxious to have my body back.	1	2	3	4	5
23. Breastfeeding made me feel more confident as a mother.	1	2	3	4	5
24. My baby gained weight really well with breast milk.	1	2	3	4	5
25. Breastfeeding made my baby feel more secure.	1	2	3	4	5
26. I could easily fit my baby's breastfeeding with my other activities.	1	2	3	4	5
27. Breastfeeding made me feel like a cow.	1	2	3	4	5
28. My baby did not relax while nursing.	1	2	3	4	5
29. Breastfeeding was emotionally draining.	1	2	3	4	5
30. Breastfeeding felt wonderful to me.	1	2	3	4	5

APPENDIX M

LETTERS OF PERMISSION

UNIVERSITY OF ILLINOIS
AT CHICAGO

College of Nursing
Quad-Cities Regional Program
555 6th Street, Suite 500
Moline, Illinois 61265

Monday, November 06, 2000

Linda A. Hagemann
995 E. Baseline Rd #1051
Tempe, AZ 85283

Dear Ms. Hagemann:

Thank you for your letter of November 1, 2000. Please find enclosed the requested materials: breastfeeding knowledge questionnaire A and B, and the 6 week telephone survey. You have my permission to use these materials or adapt them to your project.

Best wishes,

Pamela D. Hill, PhD, RN
Associate Professor

From: mtulloch@csu.edu.au
Sent: Sunday, November 12, 2000 6:03 PM
To: lhagemann@earthlink.net
Subject: Questionnaire

Dear Linda
I've air-mailed a copy of the questionnaire we used in the study.
You're welcome to use it if it's suitable for your purposes
Regards
Marian
Dr Marian Tulloch
Head, School of Social Sciences and Liberal Studies
Charles Sturt University
BATHURST 2795
Australia
Phone: 02 6338 4658
Fax: 02 6338 4401
e-mail: mtulloch@csu.edu.au

From: Cornett [mailto:bcornett@otterbein.edu]
Sent: Wednesday, November 22, 2000 6:31 AM
To: lhagemann@earthlink.net
Subject: breastfeeding

Hello Linda,
I received word from OSU that you are interested in using a tool from my dissertation. You have my permission to use any of the tools and I would
be very interested in the outcomes of your study.
Barb

Barbara Cornett, Professor
Nursing
Otterbein College
1 Otterbein College
Westerville, OH 43081
614 823-1388
FAX 614 823-3131

FRANKLIN COUNTY
Home Health Agency, Inc.

3 Home Health Circle, Suite 1
St. Albans, Vermont 05478
Telephone: (802) 527-7531
Fax: (802) 527-7533

October 30, 2000

Linda A. Hagemann
995 E. Baseline Rd #1051
Tempe, AZ 85283

Dear Ms. Hagemann:

Thank you for your letter of October 17. You have permission to use the MBFES in your research on the effect of information and affective support on the maternal perceptions of breastfeeding success. I would appreciate your sending me your research outcomes, if you use the tool.

The MBFES is appropriate for use after breastfeeding is completed or after the first two or three months of breastfeeding. It is intended to measure the mother's evaluation of breastfeeding, considering the breastfeeding experiences of both mother and infant.

The Maternal Enjoyment/Role Attainment Subscale consists of items 1,2,6,9,11,12,16,17,18,20,21,23,25, and 30. The Infant Satisfaction/Growth Subscale consists of items 3,4,7,10,15,19,24, and 28. The Lifestyle/Maternal Body Image Subscale consists of items 5,8,13,14,22,26,27, and 29. For analysis, I used a score of 1 for strongly disagree, up to 5 for strongly agree. Items worded negatively are reflected for scoring. These are items 3,5,8,13,14,15,19,22,27,28, and 29. To transform (reflect) the scores, subtract each participant's rating from 6 (i.e., 1 becomes 5, 2 becomes 4, etc.). Each participant's scores can be added for a total MBFES score as well as subscale totals.

Please contact me if you have any questions about the MBFES or its development. I can be reached at this address or by e-mail at eleff@together.net.

Sincerely,

Ellen W. Leff, RN, MS

Director of Clinical Services

Office of Human Research Administration
Vice Provost for Research
Arizona State University
Box 878206
Tempe, AZ 85287-8206
602/965-6788 FAX: 602/965-7772

M E M O R A N D U M

February 7, 2001

TO: Susan Mattson
Nursing

FROM: ~~B~~Richard Hinrichs, Chair
Human Subjects IRB

SUBJECT: "Breastfeeding Information and Support Given by Inpatient Nurses, Maternal Factors, and Breastfeeding Success"
HS #06050-01

The Human Subjects Institutional Review Board has approved the above-referenced application for the conduct of research involving human subjects on February 2, 2001, contingent upon receipt by the IRB of approval letters from each institution's IRB.

The IRB would like to remind you that Federal regulations require investigators to immediately report to the board any complaints, incidents, or injuries that may occur as part of the project.

Please sign below indicating your willingness to comply with these procedures, and return one copy with original signature to Karol Householder at the Office of Human Research Administration (mail code 8206) for our files.

ss

xc: Bailey Creighton

Susan Mattson
Signature

2/13/01
Date

9 March 2001

MEMORANDUM FOR Cpt Linda Hagemann
4700 Las Vegas Blvd N.
Nellis AFB, NV 89191-6601

FROM: 60th Medical Group/SGSEM
101 Bodin Circle
Travis AFB, CA 94535-1800

SUBJECT: Approval of FDG20010019E

1. On 5 March 2001, the 60th Medical Group, David Grant USAF Medical Center Institutional Review Board (IRB), approved your research proposal titled, "Breastfeeding Education and Support Given by Inpatient Nurses and Maternal Factors Related to Breastfeeding Success at Two and Six Weeks Postpartum" and it is assigned protocol **#FDG20010019E. Please refer to this number in all future correspondence regarding the study.** Your study was classified exempt from the common rule in accordance with 32CFR219.101(b)(2).

2. To assist in the proper accomplishment of the study you should assure compliance with AFI 40-402. Protection of Human Subjects in Biomedical and Behavioral Research, as it pertains to annual progress reports, final reports and the proper maintenance of records. A letter of information will be used in lieu of an informed consent document (ICD)for this protocol.

3. Attached is a certificate of compliance with AFI 40-402. Complete it, retain a copy for your reference, and return the original to SGSEM through your element/flight chief (or equivalent) **NLT 23 Mar 01**.

Dr. Mary S. Nelson Lt Col, USAF, NC
Associate Director Clinical Investigation Facility

Attachments:
1. Memorandum from 60 MDG/CC
2. Memorandum from SGB (SGSE)
3. Certificate of Compliance, AFI 40-402

cc:
Protocol File

Banner Health Arizona
A division of Banner Health System

April 25, 2001

Linda Hagemann, RN
995 E. Baseline Rd. #1051
Tempe, AZ 85283

RE: Breastfeeding information and support given by inpatient nurses, maternal factors, and breastfeeding success at two weeks and six weeks postpartum
BHRI Study #01-0023-02

Dear Ms. Hagemann:

The protocol and the consent for the above named study have received expedited approval from the GSRMC Institutional Review Board. You may now begin your study. Enclosed is a copy of the consent that has been stamped with the IRB approval date. You must use photocopies of this consent exclusively. **A copy of the signed consent document must be placed in the participant's permanent record at Thunderbird Samaritan Medical Center.**

Please note that it is the policy of this institution that no research study should pose a financial burden on the patient.

The Board's approval to conduct your study will expire on **April 18, 2002**. The Board requests that you submit a continuing review report on your protocol to them at least annually **(on or before March 15, 2002)** and upon completion of the project. The occurrence of adverse reactions/events must be reported to the Board in writing within 10 days of the occurrence. Any changes in the study protocol or informed consent, unusual events, results of the study or any additional information relative to the study must be submitted to the Board. In the event the study results are published, please send a copy to the Banner Health Research Institute so we may include it in your file.

If you have any questions you may contact the Board through the Banner Health Research Institute at 602-271-9472, Monday through Friday, from 9 AM to 5 PM.

Sincerely,

Joseph J. Frank, Ph.D.
Chairman
GSRMC Institutional Review Board

JJF/bk

Desert Samaritan
Medical Center
Banner Health Arizona

April 5, 2001

Linda A. Hagemann
995 E. Baseline Road #1051
Tempe, AZ 85283

RE: Research Study: Breastfeeding information and support given by inpatient nurses, maternal factors, and breastfeeding success at two weeks and six weeks postpartum

Dear Ms. Hagemann:

Thank you for submitting the above referenced study to the IRB Office for review. The study was reviewed at the Desert Samaritan IRB meeting on March 22, 2001. The IRB voted to approve initiation of the study and the consent form, with correction of the hospital name by replacing Desert Samaritan Medical Hospital with Desert Samaritan Medical Center. Also, the DSMC disclaimer must be added: Desert Samaritan Medical Center will provide no compensation in the event of injury to subjects of research studies. This does not waive your rights in the result of negligence. You have since made these revisions, and the consent form is approved as of April 5, 2001.

My understanding is that you have been working with the department heads in the areas of the hospital that you intend to conduct your research, and appropriate review and approval has been accomplished.

An annual report is due by March 22, 2002, any changes in the study design or consent form must be submitted to the IRB prior to initiation. Good luck in your endeavor, and if you have any further questions, please call the IRB Office, 480-835-3756.

Sincerely,

Jim Guidry, PharmD
Chairman, Institutional Review Board

Cc: Joan Allen, OB/Gyn Dept

Banner Health Arizona
A division of Banner Health System

April 25, 2001

Linda Hagemann, RN
995 E. Baseline Rd. #1051
Tempe, AZ 85283

RE: Breastfeeding information and support given by inpatient nurses, maternal factors, and breastfeeding success at two weeks and six weeks postpartum
BHRI Study #01-0022-01

Dear Ms. Hagemann:

The protocol and the consent for the above named study have received expedited approval from the GSRMC Institutional Review Board. You may now begin your study. Enclosed is a copy of the consent that has been stamped with the IRB approval date. You must use photocopies of this consent exclusively. **A copy of the signed consent document must be placed in the participant's permanent record at Good Samaritan Regional Medical Center.**

Please note that it is the policy of this institution that no research study should pose a financial burden on the patient.

The Board's approval to conduct your study will expire on **April 18, 2002**. The Board requests that you submit a continuing review report on your protocol to them at least annually **(on or before March 15, 2002)** and upon completion of the project. The occurrence of adverse reactions/events must be reported to the Board in writing within 10 days of the occurrence. Any changes in the study protocol or informed consent, unusual events, results of the study or any additional information relative to the study must be submitted to the Board. In the event the study results are published, please send a copy to the Banner Health Research Institute so we may include it in your file.

If you have any questions you may contact the Board through the Banner Health Research Institute at 602-271-9472, Monday through Friday, from 9 AM to 5 PM.

Sincerely,

Joseph J. Frank, Ph.D.
Chairman
GSRMC Institutional Review Board

JJF/bk

St. Rose Dominican Hospital
CHW

Siena Campus
3001 St. Rose Parkway
Henderson, NV 89052
(702) 616-5000 Telephone
(702) 616-5511 Facsimile

Rose de Lima Campus
102 E. Lake Mead Drive
Henderson, NV 89015
(702) 616-5000 Telephone
(702) 616-4699 Facsimile

April 12, 2001

Linda A. Hagemann, RN-C, ICCE
19 -B West Dr.
Las Vegas, NV 89115

Dear Linda,

Thank you for your interest in using St. Rose Dominican Hospital as a data collection site for your research. As we discussed in the meeting with Therese Merrill on March 16, you will present your project at any of the prenatal, breastfeeding, or baby care classes conducted or sponsored by St. Rose Dominican Hospital.

You will be responsible for recruiting participants, obtaining permission, and any follow-up for the purposes of your study. This will not require nursing involvement, nor will it involve visits to the inpatient.

We will need to maintain a copy of the consent you obtain from the participants. Please deliver those to me at my Siena office.

It will also be your responsibility to arrange to attend the classes and present your study.

Please contact me if I can be of further assistance, and I wish you every success with your research.

Sincerely,

Connie DeLong RN, BSN

Connie DeLong, RN, BSN
Manager, Maternal Child/Pediatrics
St. Rose Dominican Hospital

Sunrise
HOSPITAL & MEDICAL CENTER
SUNRISE CHILDREN'S HOSPITAL
3186 South Maryland Parkway
Las Vegas, Nevada 89109
Phone (702) 731-8000
COLUMBIA's home page is http://www.columbia.net

April 7, 2001

Ms. Linda Hagemann
995 East Baseline Road #1051
Tempe, AZ 85283

Dear Ms. Hagemann:

Re: #01-009 **Breastfeeding Information and Support Given by Inpatient Nurses, Maternal Factors and Breastfeeding Success**

Thank you for presenting the above-referenced protocol to the Institutional Review Board at its meeting of March 7, 2001. Approval is granted for one year from that date.

Enclosed is a copy of the Informed Consent with the IRB Approved stamp on each page. A signed copy of this approved consent must be presented to the hospital upon admission for each patient on the study. A written continuing review report is required at the end of the approved year. If the study is completed before the end of the year, please forward a closing report at the time of completion.

Please note that all unanticipated adverse events occurring at any site must be promptly reported to the IRB, regardless of whether it is felt to be related to the study. Any death or serious injury to a participant which is or may be related to the study must be reported to the IRB within five days.
As specified in Article 2.7 of the IRB Policies and Procedures, the Hospital has the authority to review investigational studies that have been approved by the IRB. Should any issues arise from the Hospital's review, you will be promptly notified.

If I can be of any assistance during the coming year, feel free to contact me or Mary Ann Koester, Manager of Medical Staff Services at 731-8211.

Sincerely,

Ronald S. Orear, Chairman
Institutional Review Board

RSO:mak
minutes/irb/0301fu

Sunrise
HOSPITAL & MEDICAL CENTER
SUNRISE CHILDREN'S HOSPITAL
3186 South Maryland Parkway
Las Vegas, Nevada 89109
Phone (702) 731-8000
COLUMBIA's home page is http://www.columbia.net

April 7, 2001

Ms. Linda Hagemann
995 East Baseline Road #1051
Tempe, AZ 85283

Dear Ms. Hagemann:

Re: #01-009 Breastfeeding Information and Support Given by Inpatient Nurses, Maternal Factors and Breastfeeding Success

The Institutional Review Board is in receipt of your letter dated March 14, 2001 requesting review and approval of an amendment to the aforementioned study. The informed consent and Amendment was approved by the IRB at its April 4, 2001 meeting. This amendment changes the inclus8ionexclusion criteria to reflect women 18 years or older for the study.

Enclosed is a copy of the Informed Consent with the "IRB Approved" stamp on each page. A signed copy of the approved consent must be presented to the hospital upon admission for each patient on the study.

You are reminded that all unanticipated adverse events occurring at any site must be promptly reported to the IRB, regardless of whether it is felt to be related to the study. Any death or serious injury to a participant which is or may be related to the study must be reported to the IRB within five days.

Continuing review reports will be due as previously scheduled.

The IRB wishes you continued success in this study.

Sincerely,

R. S. Oseas

Ronald S. Oseas, M.D., Chairman
Institutional Review Board

RSO/mak
MINUTES/IRB/0401FU

Sunrise
HOSPITAL & MEDICAL CENTER
SUNRISE CHILDREN'S HOSPITAL
3186 South Maryland Parkway
Las Vegas, Nevada 89109
Phone (702) 731-8000
www.sunrisehospital.com

June 12, 2001

Linda Hagemann, R.N.
995 East Baseline Road, #1051
Tempe, AZ 85283

Dear Ms. Hagemann:

Re: #01-009 **Breastfeeding Information and Support Given by Inpatient Nurses, Maternal Factors and Breastfeeding Success**

The Institutional Review Board ("IRB") of Sunrise Hospital and Medical Center is in receipt of your letter dated May 7, 2001 requesting review and approval of an informed consent for the aforementioned study for Mountainview Hospital. The informed consent currently on file covered only Sunrise Hospital and Medical Center. The informed consent for Mountainview is identical to that approved for Sunrise Hospital. This informed consent was approved by expedited review effective June 11, 2001.

Enclosed is a copy of the Informed Consent with the "IRB Approved" stamp on each page. A signed copy of this approved consent must be presented to Mountainview Hospital upon admission for each patient on the study.

A written continuing review report is required at the end of the approved year. If the study is completed before the end of the year, please forward a closing report at the time of closure.

Please note that all unanticipated adverse events occurring at any site must be promptly reported to the IRB, regardless of whether it is felt to be related to the study. Any death or serious injury to a participant which is or may be related to the study must be reported to the IRB within five days.

As specified in Article 2.7 of the IRB Policies and Procedures, the Hospital has the authority to review investigational studies that have been approved by the IRB. Should any issues arise from the Hospital's review, you will be promptly notified.

If you have any questions regarding this matter, please do not hesitate to contact me or Mary Ann Koester, Manager, Medical Staff Services Department, at 731-8211.

Sincerely,

Ronald S. Oseas, Chairman
Institutional Review Board

RSO/mak
minutes/irb/0601fuma